

AMERICAN ARTISAN

MAY 1960

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... The Magazine of

CENTRAL RESIDENTIAL AIR CONDITIONING

WARM AIR HEATING • SHEET METAL CONTRACTING

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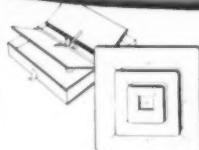
**GREATER FREE AREA!
LESS AIR RESISTANCE!
LOWER INSTALLATION COSTS!**

WITH *Air Control*
CEILING DIFFUSERS



All NEW Ceiling Diffuser Dampers

... in range of sizes to fit any round or square models. Years of rattle-free, trouble-free operation. Exclusive design features include ingenious Nylon rack and pinion gear that operates butterfly valves without linkage, chains or springs and holds damper firmly in place, even under extreme air velocities. Positive, easy-to-set Adjusto-Stop balances system at Diffuser face. No need for installation rings.



**LARGE CAPACITY...DECORATOR STYLED...
EFFECTIVE ANTI-SMUDGE RING**

LOOK
TO *Air*
Control
for
QUALITY



Air Control large capacity Ceiling Diffusers are available in either round or square styles . . . flush or step-down type . . . in a wide range of sizes for every residential, commercial or industrial application. COMPARE these diffusers . . . for capacity, appearance, operating efficiency and cost. You will quickly see that you get more for your dollar with Air Control.

- Built-in anti-smudge ring.
- Broad diffuser rings increase diffuser capacity . . . provide rapid, complete air diffusion . . . lower air resistance.
- Ample capacity is allowed for installation on a duct of the same size. No need to use a diffuser a size larger than the duct to obtain necessary free area. Big savings to you in labor and material.
- Flowing shape of ring provides pleasing appearance . . . harmonizes with any interior.
- Both square and round styles finished in beautiful satin-beige prime coat, with sponge rubber gaskets.

ORDER your supply of Air Control Ceiling Diffusers and Dampers TODAY. Your nearby jobber carries a big stock. Or write direct for Catalog 60-AC, prices and complete information.

SEE OUR ANNOUNCEMENT AD ON PAGES 20, 21

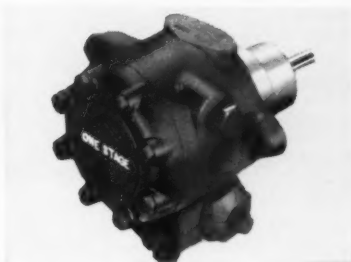
Leigh Industries Inc.

Asheville, N. Carolina, Dept. 160, P.O. Box 2599, another new subsidiary of Air Control Products, Inc. Sales, Engineering and Advertising Offices: Coopersville, Mich. West Coast Warehouse: Leigh Industries (California), Inc., 649 S. Anderson St., Los Angeles, California. Made in Canada by: Leigh Metal Products Ltd., 72 York St., London, Ont. Prairie Provinces Affiliate: Leigh-Tornel Distributors Ltd., 549 Archibald Street, St. Boniface, Manitoba—Copyright 1960-ACP, Inc.

*Air Control's newest subsidiary
... Leigh Industries Inc., Asheville, North
Carolina ... where all registers, grilles
and diffusers are now manufactured.*

RELY-ABILITY

**More than 6,000,000 homes are
reliably served by oil burners
equipped with Sundstrand fuel units**



An estimated 9 billion gallons of fuel oil are pumped each year through the nozzles of more than 6,000,000 oil burners equipped with Sundstrand fuel units.

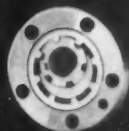
The ability of modern oil burners to perform reliably with little or no maintenance is a tribute to the manufac-

turers, dealers, and fuel oil suppliers who build, install, and service oil burners throughout America.

The record of dependable operation established by domestic oil-fired heating systems is backed by the reliable performance of Sundstrand fuel units . . . fuel units that each year pump fuel oil from the storage tanks to the oil burners of more than 6,000,000 American homes.

**Over 2¼ million public circulation
of this advertisement!** This advertisement featuring the reliability of domestic oil burning equipment is appearing in U. S. News & World Report, April 11, Wall Street Journal, April 5, Steel, April 4, and the May issue of Fortune and Scientific American - to create a total of more than 2¼ million favorable impressions for oil heating.

Rota-roll pumping assembly - "heart" of every Sundstrand fuel unit. Patented design gives quiet, efficient operation, long life and uniform oil flow.



SUNDSTRAND HYDRAULICS

DIVISION OF SUNDSTRAND CORPORATION

2210 Harrison Ave., Rockford, Ill. — Eastern Sales Office: 89 Summit Ave., Summit, N. J. Made in Canada by John Inglis, Ltd., 14 Strachan Ave., Toronto; in Sweden by Sundstrand Hydraulic AB Stockholm; in France by R. S. Stockvis, et Fils, S. A., 20-22 Rue Des Petites - Hotels, Paris

SUNDSTRAND

AMERICAN ARTISAN

... The Magazine of
CENTRAL RESIDENTIAL AIR CONDITIONING
WARM AIR HEATING • SHEET METAL CONTRACTING

MAY 1960

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Merged with American Artisan are "Warm Air Heating" and "Furnaces and Sheet Metals"



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one thermostat unit
handles
12
different
heating
and
cooling jobs!



APPLICATION	FAN SELECTOR SWITCH	SYSTEM SELECTOR SWITCH
HEATING ONLY	---	---
	---	AUTO-OFF
COOLING ONLY	---	---
	---	AUTO-OFF
	AUTO-ON	AUTO-OFF
COOLING — with system interlock for separate heating thermostat	AUTO-ON	---
	---	HEAT-OFF-COOL
	AUTO-ON	HEAT-OFF-COOL
COMBINATION Heating-Cooling	---	HEAT-COOL
	AUTO-ON	HEAT-COOL
	---	HEAT-OFF-COOL
	AUTO-ON	HEAT-OFF-COOL

PENN RIMSET REDUCES YOUR CONTROL INVENTORY

Why carry a large inventory of room thermostats when **ONE** unit . . . the Penn "RIMSET" . . . will control any heating-cooling function desired? You just stock variables of the subbase . . . the same thermostat simply plugs onto any one of these subbases!

And, here's another extra . . . the Penn "RIMSET" is today's easiest-to-set, easiest-to-read thermostat. When setting temperature, simply *dial the rim* . . . the extra large dial face *remains stationary!* Once you use this better thermostat, you'll want it on all of your heating and cooling installations. Try Penn on your next job!

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N. Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

the editor's notebook

Thumbing Through This Month's Artisan

... we find the number of dealer-contractors who use automation and mechanization in fabricating sheet metal products is increasing at the contractor level, and that this increased utilization of power tools and equipment benefits the industry by making its products and services more economical. In *Mechanized Duct Fabrication Plant Produces High Volume at Less Cost* you can see how the mechanized fabricating techniques developed by a firm and its journeymen made it possible to up production of quality work, increase employees' compensation and develop more products for the industry. We take you on a pictorial tour of the operation so you can see the mechanized equipment used by the firm, and learn how it fits in to the over-all fabricating operation. To further point out the inroads made by automation in the fabricating industry, *Special Dies Add To Press Brake Performance* is presented to show you a specially designed tool steel die that enabled a firm to convert a press brake into a semi-production tool and form more than 3800 fin-shaped stainless steel mullions for a skyscraper in Pittsburgh.

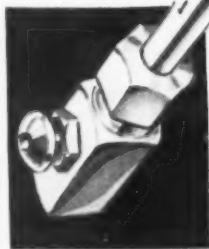
Change

... in business environment created acute parking problems for customers using the front entrance and for employees using the rear entrance so this dealer-contractor found a more desirable location by following a set of rules that outlined his requirements. In *Dealer-Contractor Relocated Operation to Increase Traffic, Speed Deliveries* you will see how

MODERN LIGHTER TUBE

outside lighting
for all
gas fired
appliances

safe
simple
convenient
dependable



• Available on all makes and models as original equipment from the manufacturer... Your customer will appreciate the push-button ease of pilot lighting and the freedom of sometimes hazardous lighting practices.

ATTENTION ENGINEERS—

NOW... Modern Lighters, Inc. has developed a new "carry-over" tube for sectional burners... approved and accepted by leading manufacturers. Send for complete information and samples.

(U. S. Pat. No. 2728384, Can. Pat. No. 566970)

WRITE FOR
COMPLETE
LITERATURE



**MODERN LIGHTERS
INCORPORATED**
Northville, Michigan

the editor's notebook

(Continued)

this dealer-contractor dealt with such problems as administrative accommodations, office facilities, shop facilities and layout, company identification on the exterior of the building, parking facilities and utility of the building in order to choose a building most suited to a warm air heating dealer-contractor's operations. Basically, he needed, and found, a building that provided 25 percent office area, and 75 percent shop and storage area.

Merchandising

... summer comfort will be easier if you make your place of business stand out over your competitors with showmanship, displays that attract public attention and stimulate interest, and proper interior and exterior maintenance of your building because this is one way you will be able to *Establish Your Company As Air Conditioning Headquarters*. You will find ideas that will enable you to make the most out of available facilities, whether your showroom be large or small, and suggested sales tools that will make your place of business stand out over competition. This article contains a wealth of information on how you can prepare your business for the summer air conditioning selling season because it explains how to first attract the prospect's attention with the over-all appearance of your building, then stimulate his interest with the right kind of window displays.

What Advertising Can Do—and What It Can't

COMPANIES are fast learning they can't take advertising for granted — not if they want to stay competitive. That advertising has become one of industry's key selling

Now Gas cooling --- --- --- with BRYANT!

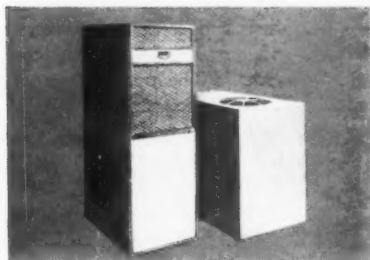
WATCH customers' favorable reactions when you explain the new Bryant Deluxe Gas Air Conditioner and its control over the weather. When they find out it's Gas . . . and that just one control switches from winter heating to summer air conditioning . . . you'll be doing more business than ever.

One of the big plus-benefits that helps sell this system is that the cooling unit can be added to the Bryant Gas furnace later on, and still the homeowner will enjoy the same easy-adjustment and economy advantages.

Customers have come to know that Gas is their most dependable home servant . . . in all kinds of weather. And that Gas is economical to install and to operate. There is nothing to wear out or make noise in a Gas flame.

Nothing heats, cools and conditions air like Gas!

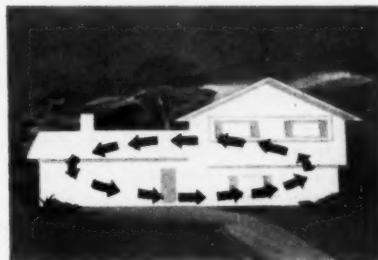
AMERICAN GAS ASSOCIATION



EASY INSTALLATION. The compact Bryant Gas furnace fits handily into closet-size floor space. The Bryant cooling unit goes outdoors. No water tower, no refrigerant piping. No high amperage wiring . . . because it's Gas!



EASY REMODELING. The Bryant furnace is specifically designed for add-on Gas cooling—an extra selling feature for your customers. Gas provides the economical way to have *whole-house, all year* air conditioning on both existing homes or new construction.



"FRESH-AIR" CIRCULATION, WINTER OR SUMMER. Bryant Gas heating provides an even flow of warm air, responding instantly to temperature changes. And Bryant Gas extracts pollen, and moisture. Both help you sell . . . *because they're Gas!*

ONLY GAS  **does so much more...for so much less!**

the editor's notebook

(Continued)

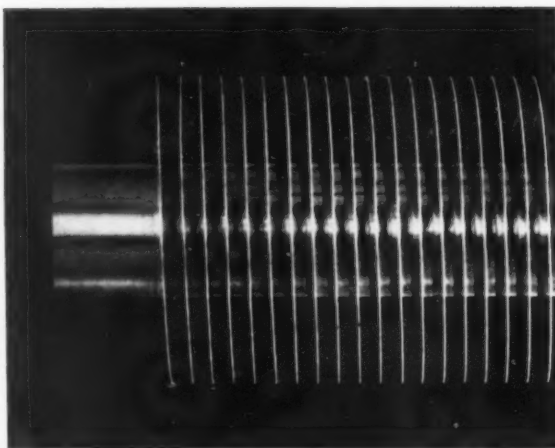
tools is evidenced by the growth of advertising expenditures from \$2.9 billion in 1945 to an estimated \$10 billion for 1958.

To obtain a current picture of advertising practices, Dun's Review and Modern Industry assembled a special panel of advertising experts who outlined the present effectiveness of advertising as a business tool. In a few simple statements of fact on what advertising can and can't do, the panel cleared the air of misunderstanding surrounding the function of advertising.

The panel pointed out that, basically, advertising can: 1) build a company name that will create consumer acceptance, perhaps even consumer demand; 2) introduce new products, new improvements, and ideas almost overnight to the public; 3) create an image of a company that is valuable in attracting good personnel as well as creating good public relations; and 4) obtain distribution for new products and widen distribution for older items.

However, advertising cannot 1) be expected to do a precise job and produce a precise result — at least at this stage of its development; 2) produce miracles — it cannot enable you to buck a basic consumer trend; 3) put over an inferior product by sheer quantity or quality of words, no matter how much money you spend; 4) work effectively if management makes the advertising budget a catch-all for every expense it can't charge elsewhere; and 5) function efficiently if used for vanity purposes.

Advertising can be expected to do only part of the complete job of closing the gap between offering a product (or service) for sale



AEROFIN Smooth-Fin Coils offer you

**Greater Heat Transfer
per sq. ft. of face area**

**Lower Airway
Resistance**

— less power per c.f.m.

Aerofin smooth fins can be spaced as closely as 14 per inch with low air friction. Consequently, the heat-exchange capacity per square foot of face area is extremely high, and the use of high air velocities entirely practical. Tapered fin construction provides ample tube-contact surface so that the entire fin becomes effective transfer surface. Standardized encased units arranged for simple, quick, economical installation.



Write for Bulletin S-55

AEROFIN CORPORATION

101 Greenway Ave., Syracuse 3, N.Y.

Aerofin is sold only by manufacturers of fan system apparatus. List on request.

the editor's notebook

(Continued)

and getting a signature on a contract.

Typical Executive Is Meeting Minded

THE typical executive, according to a recent survey, is 41½ years of age, has a college degree, is married and has two children. He owns his own home, is active in the community, works 51 hours a week and makes a salary of \$10,041 a year. Apparently he is convinced of the value of industry meetings because the survey discloses that he attends 8.6 such meetings every year. Other points brought out by the survey are that he likes working with people and dislikes such chores as detailed paper work, clerical duties and writing reports.

Firms Spending More On Product Research

FOR YEARS we've heard about the "world of tomorrow" and from reports I've seen lately, it's nearer than many suspect. For instance, the American Management Association conducted a survey among 600 United States corporations which shows that 64 percent of the firms had increased their budgets for development of new products and processes. Eight percent had allocated the same amount as spent during 1958 and 28 percent had reduced their research and development budgets.

It's interesting to note that the total 1958 budget was four percent higher than in 1957. The increase of 1959 expenditures for research and development over 1958 was 12.1 percent. New product expenditures in 1958 were revealed to have averaged 3.2 percent of the sales dollar that year, compared with 2.8

Auer "VALUAIRE"

The greatest value in
Baseboard Perimeter Diffusers



LOW, LOW LIST

\$4.50



AUER VALUE-LINE

PERIMETER FLOOR DIFFUSERS

- Lowest cost for economy projects
- Built-in opposed-blade damper
- Delivers "perfect-pattern" air-diffusion
- Available in 2 1/4" x 12" and 14"; 4" x 10", 12" and 14"

• **ECONOMY PRICE**... Increases profit on regular and development projects where low-cost diffusers are a necessity.

• **BUILT-IN QUALITY**... Top grade materials, rugged construction and aerodynamic engineering are Valuaire features.

• **DUAL-DESIGN**... Valuaire is equally efficient for heating or combination heating-cooling. 18" long it achieves a more efficient air spread than many longer units. Installs snugly against irregular wall surfaces.

• **ATTRACTIVE**... Smooth flowing modern lines blend with any construction. Bufftone finish easily repainted to match interior decor.

• **FAST, EASY INSTALLATION**... Package unit ready to install with only a screwdriver.

COMPARE: PRICE • DESIGN • PERFORMANCE • CONSTRUCTION
YOU'LL SELECT "VALUAIRE"

Auer
REGISTERS
and GRILLES

THE AUER REGISTER COMPANY

"REGISTERS AND GRILLES FOR EVERY HEATING AND COOLING NEED"

6603 CLEMENT AVENUE • CLEVELAND 5, OHIO

the editor's notebook

(Continued)

percent in 1957. The rubber industry topped all other groups.

In the fabricated metal products category, of 38 companies reporting, 19 showed an increase in their development and research budgets over 1958, five indicated no change and 14 had cut their expenditures. The average increase in budget of this group for 1959 was 5.7 percent.

The AMA analysis was developed to assist companies in formulating guide lines for the charting of their corporate growth programs. It provides some indication of the relative shift in emphasis that will be reflected ultimately in new product offerings in selected industrial groups.

According to AMA, product development activities today have a greatly magnified multiplying effect on earnings. New products tend to produce added profits and part of these can be made available for expanded development programs. Corporations that are ahead usually stay ahead and it is becoming increasingly difficult for late starters to catch up.

Commenting on the need for better management of technology, Philip Marvin, research and development division manager for AMA, cautioned that "the really big achievements will depend more on technological capabilities and the use of technology than on the mere spending of more money. The expenditure of less money can often yield greater returns, if spent wisely and effectively.

"Those corporations that can capture leadership positions in the use of new technology within specific industries can command their destinies, both with respect to directions taken and profit levels achieved. Technology is the arch foe of established



**FOR HEATING
NOW
AND COOLING
NOW**



**FOR HEATING
NOW
AND COOLING
LATER**

AIR-EASE fills both needs

GAS OR OIL FIRED
BASEMENT, HIBOY, COUNTERFLOW, HORIZONTAL

WRITE for information
and name of
nearest distributor

AIR-EASE

THE JOHNSON FURNACE COMPANY
2129 WEST 117TH STREET, CLEVELAND 11, OHIO

the editor's notebook

(Continued)

order and procedure. While it creates radically new opportunities, it also creates changing conditions that call for sweeping reappraisals of management thinking and action patterns if management is to turn new technology into profits."

Cites High Cost Of Labor Turnover

WOLF Management Engineering Co. of Chicago, in surveying 768 manufacturers in the needle trades, found that "preventable labor turnover" costs \$36 million a year and affects 30 percent of the industry's work force annually. This means that some 90,000 workers are affected yearly at a cost to employers of \$398 per employee. Almost all 90,000 quit their jobs, only 1 in 30 being discharged. Layoffs not classified as preventable affected another 17 percent of the industry's labor force. Money lost because of preventable labor turnover equaled profit that could be realized from sales of \$700 million, according to the survey.

Who's Responsible For Business Failure?

DUN and Bradstreet reports that 89.4 percent of business failures are due to managerial inadequacies or deficiencies. In a survey of executives themselves, however, only one out of 12 admitted their own shortcomings may have been an important factor in business failure.

Careful Screening Of Applicants a 'Must'

WHEN hiring new employees, it is a good idea to screen applications carefully to avoid the possibility of difficulties at a later date.

CLASS OF SERVICE

This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION TELEGRAM

1201

W. P. MARSHALL, PRESIDENT

SYMBOLS

DL=Day Letter

NL=Night Letter

LT=International
Letter Telegram

The filing time shown in the date line on domestic telegrams is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

LX 2 PD. SEPTEMBER 5, 1958

OSCAR P. BRAUER

BRAUER SUPPLY CO.

2100 WASHINGTON AVENUE

ST. LOUIS 3, MISSOURI

==REWIRE TODAY - YOUR ORDER 06959 FOR AIR CONDITIONING

GRILLES AND REGISTERS RECEIVED 9/2. SHIPPED COMPLETE

TODAY 9/5 VIA RAILWAY EXPRESS B/L 1406. THIS WIRE OFFERS

OPPORTUNITY TO EXPLAIN FAST SERVICE ON AIR CONDITIONING

GRILLES. ORDERS FOR NON STANDARD SIZES ARE ASSEMBLED AND

WELDED DAILY. EVERY THURSDAY WE PAINT, FRIDAY WE SHIP===

LIMA REGISTER COMPANY

C. B. ARMOUR, LIMA, OHIO

the editor's notebook

(Continued)

A survey by Bates Associates shows that over 12 percent of all job applicants were found to be dishonest. Of 25,000 applicants investigated in the last two years, around 3000 falsified their employment forms. The top five dishonesties were: 1) failure to list jobs left under undesirable circumstances; 2) unreported police records; 3) unlisted law suits and financial difficulties; 4) inability to cooperate with other workers; 5) record of alcoholism coupled with poor attendance.

Good Idea to Meet Your Congressman

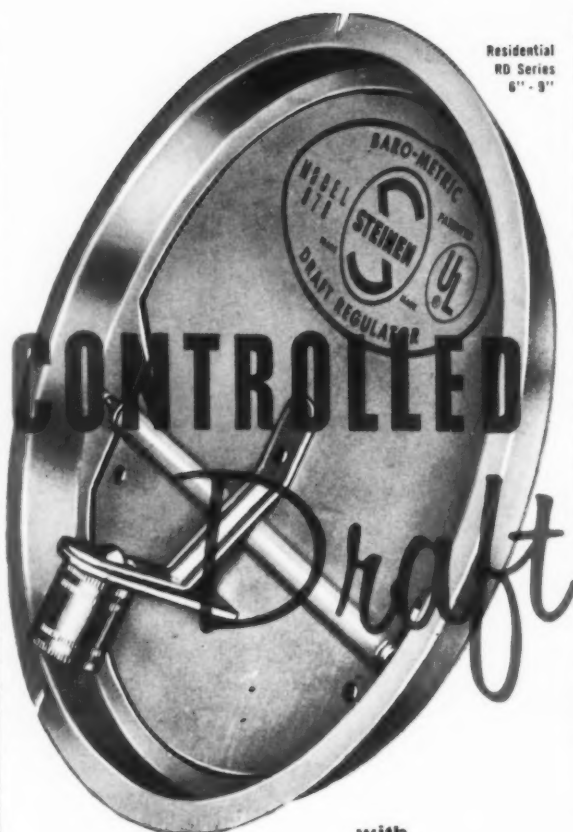
TOO OFTEN a person engaged in managing a small business will feel that he isn't properly represented in Congress. But according to the Chamber of Commerce of the United States, a small businessman can obtain representation in Congress — and learn something about how to cast his next ballot — if he will invite congressmen and senators to visit his place of business during those periods when Congress is not in session.

Manager Is Key To Firm's Success

HERE'S ANOTHER SBA "rule to manage by":

Small Business Administration
Washington, D.C.

"MONEY isn't everything in a firm's battle for success," is the way Dr. Jerome C. Beam, associate director, Psychological Services, Clark, Channel, Inc., begins his contribution to the Small Business Administration's Small Marketers Aid No. 46, "Essential Personal Qualities for Small Business Managers." Dr. Beam offers suggestions



with

STEINEN Draft Regulators

- One Calibrated Scale
- Push-Pull Slide Bar Control
- Single Point Gate Suspension
- One Piece Gate Construction
- Factory Pre-Set
- UL Approved

Steinen Draft Regulators are also available in Commercial 12" - 32", Duo-Check for coal and for gas-fired and fuel-less Incinerators. Steinen also manufactures Oil Burner Nozzles, Electrodes and Heating Accessories.

WRITE today for illustrated catalog showing complete line of Steinen heating products.



WM. STEINEN MFG. CO.
HEATING PRODUCTS DIVISION — DEPT. C-5
43 Bruen St. • Newark 5, New Jersey

the editor's notebook

(Continued)

that can be profitably used by heating and air conditioning dealer-contractors and sheet metal contractors.

The bulletin contains so much helpful information that, during the next few months, we'll present in this column excerpts that apply to our industry.

Dr. Beam points out that the key to success or failure of a small enterprise is the firm's manager. "And the sad truth is," he continues, "that there are men who simply aren't cut out to be small business managers; they're kidding themselves if they think that just because they have the authority, they also have the essential personal qualities that are necessary to make them a success in that vital job.

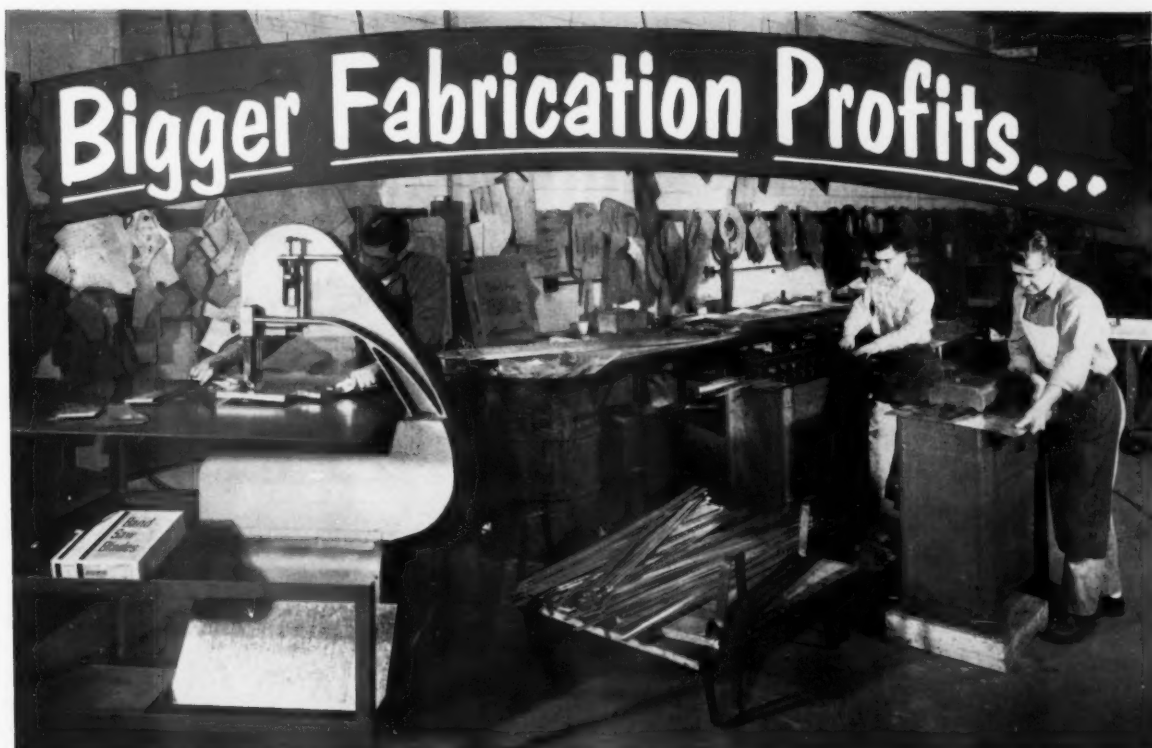
"Some men never recognize this truth; others, who have some of the important traits that would make them top notch small business leaders, have not fully developed them or, perhaps, even recognized them. And then there are the newcomers to business. They certainly should ask themselves whether or not they possess those qualities which will make them truly successful managers.

"For all three of these groups, this Small Business Aid outlines some helpful guideposts which they can use to chart their course on the road to the top spot in small organizations. What is suggested here is a program of self-improvement and personal development."

In next month's installment, the need for a program of self-improvement will be covered.

Clyde M. Barnes

EDITOR



based on Lockformer Equipment

Here's another sheet metal fabricating plant that produces more in less time, sells more at bigger profits because production is based upon Lockformer equipment. Acme Furnace Fitting Company, Chicago producer of standard and special pipe, duct and fittings, runs locks, cleats, flanges, patterns . . . almost anything on such Lockformer equipment as—

The Lockformer 22—a multi-purpose machine that rolls double seam locks and right angle flanges in straight pieces, for example, in addition to Pittsburgh locks. Acme keeps two Lockformer 22's busy.

The Cleatformer rolls drive cleats and "S" cleats 10 to 20 times faster than by other methods. A true production machine, it rolls all the cleats Acme needs.

The Lockformer 24S Band Saw, with a full

24" throat, and the Model 14SM, with 13½" throat, handle the cutting jobs . . . including stainless steel and up to 50 stacked sheets at a time. With 3 speeds available and lots of power, they're built for production and profits. Acme uses Lockformer Band Saw Blades, too, for best results, longest life.

Then there's a 12" model Lockformer Cheek Bender that turns out perfect bends every time in material up to 20 gauge. It's built to last a lifetime.

And that's how Acme Furnace Fitting Co. stays competitive whether the jobs are run in lots of 5 or 500. You too can bid lower to land more jobs and make more money on the jobs you land. Send for the latest catalog of Lockformer machinery and equipment to handle any sheet metal job.



manufactured by

THE LOCKFORMER COMPANY

Dept. A, 4615 West Roosevelt Road, Chicago 50, Illinois

In Canada: Brown Boggs Foundry & Machine Co., Ltd., Hamilton, Ontario

It's dealers—not manufacturers—



— who get called out at night

The manufacturer sleeps snugly—all night long—although the Smiths may call *you* at 2 A.M. Their furnace has stopped running, it's miserably cold outside—and the baby is sick. Who crawls out of bed, makes the hurried service call in the pre-dawn darkness? Not the manufacturer!

An awareness of this fact shapes the product and policies of Lennox. It's one of the reasons you, the dealer, are recognized as the

most important person in the entire organization.

As a businessman—with plenty of problems of your own—you're entitled to the very best help and cooperation from your equipment suppliers. Lennox takes this responsibility seriously—and it's the heart beat of the direct factory to dealer relationship.

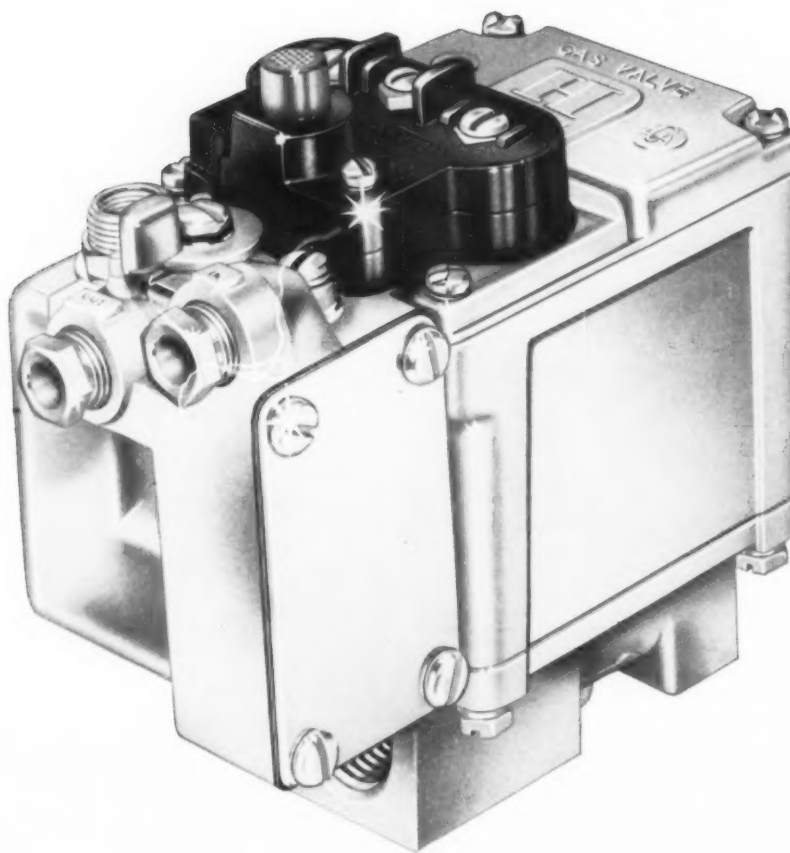
If you're not a Lennox dealer, find out now what you've been missing.

LENNOX Industries Inc.

— Established 1895

Marshalltown, Iowa • Columbus, Ohio • Syracuse, N.Y. • Fort Worth, Texas
Salt Lake City, Utah • Decatur, Ga. • Los Angeles, Calif. • Des Moines, Iowa
Lennox Industries (Canada) Ltd. • Toronto, Montreal, Calgary and Vancouver

STAN



V-81 Silent Gas Valve with space-saving, switch-type pilotstat that eliminates cost of installing and wiring separate pilotstat. Has all the universally accepted features of the *V-80 Silent Gas Valve* which combines advantages of solenoid and diaphragm valves, plus: oil-cushioned plunger, no bleed connections, operating parts sealed out of gas stream, and easy installation.

DARD

STANDARD replacements throughout
the industry are Honeywell's dependable
V-80 and V-81 Silent Gas Valves

Both you and your customers are money ahead when you replace worn out solenoids and diaphragms with these superior valves. You get *all* the advantages of old-type valves, PLUS completely quiet, practically service-free operation. And this is only one of many ways you profit by standardizing on Honeywell matched controls. For when

you deal with Honeywell, you're backed 100% by the best service in the industry and a complete line of quality products. And you get reliability—easier installation—simplified inventories—training school for your crew . . . *plus* really fast help when you need it from 112 Honeywell sales-service offices as close as your telephone.

LEARN MORE ABOUT CONTROLS IN A HONEYWELL SERVICE SCHOOL
Over 100,000 dealers and servicemen attend Honeywell Control Schools annually—in their own city or area. Ask the Honeywell man nearest you for more information.

For information about Honeywell's complete line of control systems for heating and cooling, call your local Honeywell office. Or write Honeywell, Dept. AA-5-95, Minneapolis 8, Minn.

Honeywell



First in Control
SINCE 1885

 PIONEERING THE FUTURE
75 YEARS

NEW MILCOR BUTTON LOCK-JOINT FURNACE PIPE



Easy Locking... Easy Starting

Easiest-locking seam on the market. Start one end and the rest of the seam clicks together with little more than finger-touch pressure. Closely spaced buttons provide continuous lock for entire length of seam. All the joints you need for the job are assembled in minutes — no lost time or effort.

Quick-starting, snugly-fitting connections. Short fade-away crimp on male end of joint guides end quickly into connecting joint. Entire distance from end of crimp to bead provides bearing surface — forms tight, secure connection without use of sheet metal screws.

New Milcor Button Lock-Joint Pipe is offered in 30", 60" and 120"-long joints in popular sizes and gauges. Made from Ti-Co Galvanized Steel. Ask your jobber or write to us for further information and prices.

Member of the  Steel Family

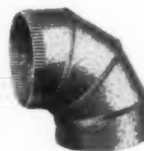
MILCOR®

INLAND STEEL PRODUCTS COMPANY

DEPT. E, 4023 WEST BURNHAM STREET, MILWAUKEE 1, WISCONSIN
BALTIMORE, BUFFALO, CHICAGO, CINCINNATI, CLEVELAND, DETROIT, KANSAS CITY,
LOS ANGELES, MILWAUKEE, MINNEAPOLIS, NEW ORLEANS, NEW YORK, ST. LOUIS

One dependable source for all your sheet metal products

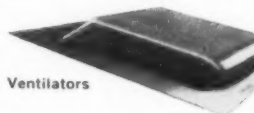
You can stake your reputation on a Milcor installation.



Heating and Air Conditioning Products



Roof Drainage Equipment



Ventilators



WHAT'S HAPPENING...

Utility Works With Dealers to Promote Cooling

COLUMBUS, O. — Representatives of the Columbus and Southern Ohio Electric Co. attended a recent meeting of the Heating, Air Conditioning and Sheet Metal Association to explain details of the program of promotion being conducted by the electric company. Robert Boyd and Richard Westhoven described the program, explaining that its purpose is to publicize the benefits of summer air conditioning and to promote the sales of air conditioning units through recognized heating and air conditioning dealer-contractors. The program, which will be completed June 1, makes use of newspaper, radio, television and billboard advertising. The electric company is working closely with dealer-contractors on tie-in advertising programs.

Predict Record Construction Era

WASHINGTON, D. C. — During the next four decades the construction industry will have to replace all houses, schools, offices, stores and other such buildings in the country, according to the Chamber of Commerce of the United States. In the life of a 40-year mortgage, the chamber points out, the industry will literally have to build another United States.

The chamber predicts that during the next decade, the industry will put in place nearly one trillion dollars' worth of construction, and by the end of the 60's the housing construction rate might reach two million homes in one year.

SMACNA Urges Members To Attend All Forums

ELGIN, ILL. — Program plans for the 1960 annual convention, scheduled May 25-29 at Hotel Statler-Hilton, Boston, have been completed, according to Joseph D. Wilder, executive secretary of Sheet Metal and Air Conditioning Contractors' National Association. This year's convention has been built around forums of interest to all members, and the practice, followed in the past, of holding several special activities forums simultaneously has been revised to enable all delegates to participate in every session.

Arrangements have been made with the Statler-Hilton for members to arrive all week before the convention and to stay after the convention closes. This will give them an opportunity to visit the many places of historic interest in the Boston area and adjacent New England.

A number of activities have been planned for ladies attending the convention, including luncheon at the "Yankee Fisherman," a visit to the glass flower museum, and a sightseeing bus tour of a few major historic shrines. Other special events include a Boston Symphony "Pops" concert and a real New England clambake.

Following is an outline of the four-day program:

Wednesday, May 25

Meeting of board of directors (all day)

Meeting of council of chapter representatives (all day)

Meeting of trustees, group insurance plan (11:30 a.m.)

Thursday, May 26

10:00 a.m. — General Business Session

Reports of president, treasurer, secretary

2:00 p.m. — Business Management Forum

Sheet metal industry overhead and profit survey in Dallas, Texas

Ratio analysis for small business (current assets to liabilities, assets to net worth, debt to net worth, net sales to net worth, etc.)

Conditions of the contract, as espoused by Consulting Engineers Council

Estimating — Panel presentation of procedures in use by selected SMACNA members

8:00 p.m. — Boston Symphony "Pops" Concert

Friday, May 27

9:00 a.m. — Labor Relations Forum

Growth of addenda in Standard Form of Union Agreements
NJBSJD patterns and developments in 1959

Annual apprentice contest and committee award

New apprentice texts for mathematics and pattern developments

Report of National Joint Labor Relations Adjustment Committee

Current labor legislation
Sheet Metal Industry Funds — Panel presentation by representatives from areas having such funds

2:45 p.m. — Construction Industry Improvement Forum

A Going Voice in Construction — Council of Mechanical Specialty Contracting Industries, Inc.

Newest Factor in Construction Industry — Construction Industries Joint Committee

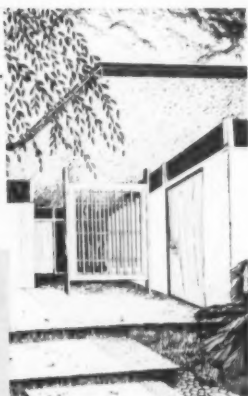
(Continued on page 24)

A great step forward in customer service...



AIR CONTROL'S NEWEST SUBSIDIARY AT ASHEVILLE, NORTH CAROLINA

Leigh Industries Inc.



Entrance view of new Leigh Industries Inc. plant.

The beautiful new LEIGH INDUSTRIES plant shown above represents another milestone in the tremendous growth of Air Control Products, Inc., since the company's origin over two decades ago. It reflects another Air Control "investment in the future." It offers better, faster service to our thousands of good, loyal customers throughout the nation . . . new, enlarged manufacturing capacity to meet the growing demand for our products . . . and guarantees the same advanced styling, quality construction and superior performance that has been the hallmark of Air Control products for nearly a quarter century.

Asheville, North Carolina was carefully selected for the plant site because of its strategic location at the intersection of principal East-West and North-South highways, served by 27 trucking lines, 3 major airlines and the main line of Southern Railway . . . offering fast service to any point in the United States.

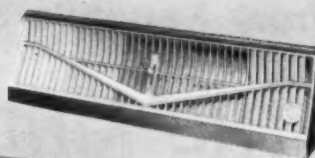
The complete Air Control line will now be manufactured and stocked at this enormous new plant . . . the largest facility of its kind in the world wholly devoted to the production of Registers, Grilles and Diffusers.

General offices . . . including sales, engineering and advertising . . . will be maintained at Coopersville, Michigan. Orders will be serviced and shipped from the new Leigh Industries plant. Warehousing facilities in Birmingham, Alabama have been moved to Asheville.

Air Control

WORLD'S MOST COMPLETE LINE OF REGISTERS, GRILLES, DIFFUSERS

LOOK
TO
**Air
Control**
for
QUALITY



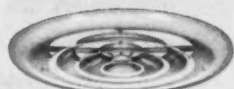
NEW "SUPER 38" PERIMETER DIFFUSER
18" long. Big 38 inches free area. Rugged High Impact Polystyrene face. Wide spread diffusing air pattern. Decorator styling. 2-tone beige finish.



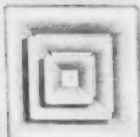
NO. 20 SERIES REGISTERS AND GRILLES
Sidewall or baseboard. 4-way control of air pattern. Positive, easy Adjusto-Stop balancing at register face. 2-tone beige finish. Full range of sizes.



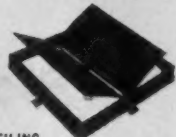
NO. 188 SERIES BASEBOARD PERIMETER DIFFUSER
Finest available. Easy, fast to install. Patented Rotary Damper permits consistent air pattern. Adjusto-Stop balancing. Variety of sizes. Beige prime coat finish.



ROUND AND SQUARE CEILING DIFFUSERS
30% to 50% greater free area. Decorator styling. 2" width Air Flow rings deflect air along ceiling with minimum resistance. Wide outer "anti-spludge" ring. Sponge rubber gasket. Satin beige prime coat finish. Many sizes and styles.



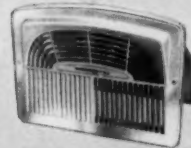
ROUND AND SQUARE CEILING DIFFUSER DAMPERS
Rattle-free operation under extreme air velocities. Adjusto-Stop balancing at diffuser face. Unique nylon screw-type operator opens or closes dampers with ease.



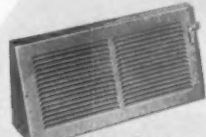
NO. 25 SIDEWALL PERIMETER DIFFUSER
Factory-set for wide fan-shaped air pattern. Fully adjustable to meet special installation requirements. Customer-approved styling. 2-tone beige finish. Baseboard type also available.



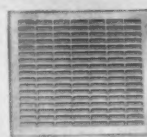
NO. 170 SERIES BASEBOARD PERIMETER DIFFUSERS
Compact. Exclusive "Air-Sweep" styling. Big 34 sq. in. free area. Factory-set fins at 4 different angles. Adjusto-Stop on damper for easy balancing at face. 2-tone beige or chrome plated finish. Many sizes.



NO. 15 SERIES SIDEWALL PERIMETER DIFFUSERS
Flared top section. Curved damper. Wide fan-shaped air pattern. Modern styling. Sponge rubber gasket. In 2 sizes. Beige prime coat or metalescent finish.



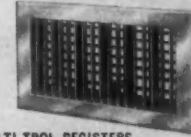
NO. 265 SERIES BASEBOARD PERIMETER REGISTERS AND GRILLES
Low cost. 3 3/4" projection at base. Adjustable fins. Adjusto-Stop balancing. Easy to install. Metalescent or beige prime coat finish. Various sizes.



NO. 333 RETURN AIR GRILLES
Low cost. Exceptionally large free area. One piece heavy gauge steel construction. Metalescent or beige prime coat finish. Many sizes.

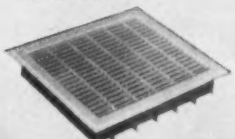


NO. 150 SERIES ECONOMY FLOOR DIFFUSER
Ideal for projects or where low cost is prime factor. One piece heavy-gauge steel face. Dial operator. Adjusto-Stop balancing. Locked volume setting. Sierra-Brown enamel finish. 5 sizes.

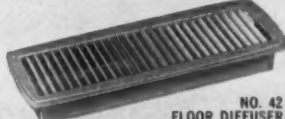


MULTI-TROL REGISTERS AND GRILLES
Features patented butterfly-type Shello-Valve for positive air-volume control. Assures even air distribution. Advanced shallow design. Adjustable deflection bars. Available in 4-way or 2-way air pattern control. Variety of styles, sizes and types.

MULTI-LOUVER REGISTERS AND GRILLES
Exclusive Multi-Louver Valve provides excellent vertical control of air pattern. Low cost. Strong one piece face. Many sizes. Beige prime coat finish.



NO. 40 SERIES FLOOR REGISTERS
Unique design provides flat walking surface. Close mesh design. Heavy amply-spaced frets. Easy-to-operate dial operator. Variety of sizes. Oak or Metalescent finish.



NO. 42 FLOOR DIFFUSER
One-piece face. Curved adjustable vanes reduce air resistance. Streamlined valve. Extra strong construction. Many sizes. Metalescent or oak finish.



SHEET METAL SCREWS
New SPEE-D hex washer head screws "drill their own hole". Cut labor cost in half. Drive chuck is key to operation. 4 sizes. 3 packs. 1 finish. Low cost sheet metal (tapping) screws also available.

Many other styles and sizes of Registers, Grilles and Diffusers are illustrated and described in Air Control's new Catalog 60-AC.

For a **FREE** copy of Catalog 60-AC clip this coupon to a postcard and mail to
AIR CONTROL PRODUCTS, INC., 160 Center St., Coopersville, Michigan

NAME _____
ADDRESS _____
CITY _____ STATE _____

LEIGH INDUSTRIES INC.

Asheville, N. Carolina, another new subsidiary of Air Control Products, Inc. Sales, Engineering and Advertising Offices: Coopersville, Mich. **West Coast Warehouse:** Leigh Industries (California), Inc., 649 S. Anderson St., Los Angeles, California. **Made in Canada by:** Leigh Metal Products Ltd., 72 York St., London, Ont. **Prairie Provinces Affiliate:** Leigh-Tornel Distributors Ltd., 549 Archibald Street, St. Boniface, Manitoba — Copyright 1960-ACP, Inc.

A progress report from Republic Steel . . .

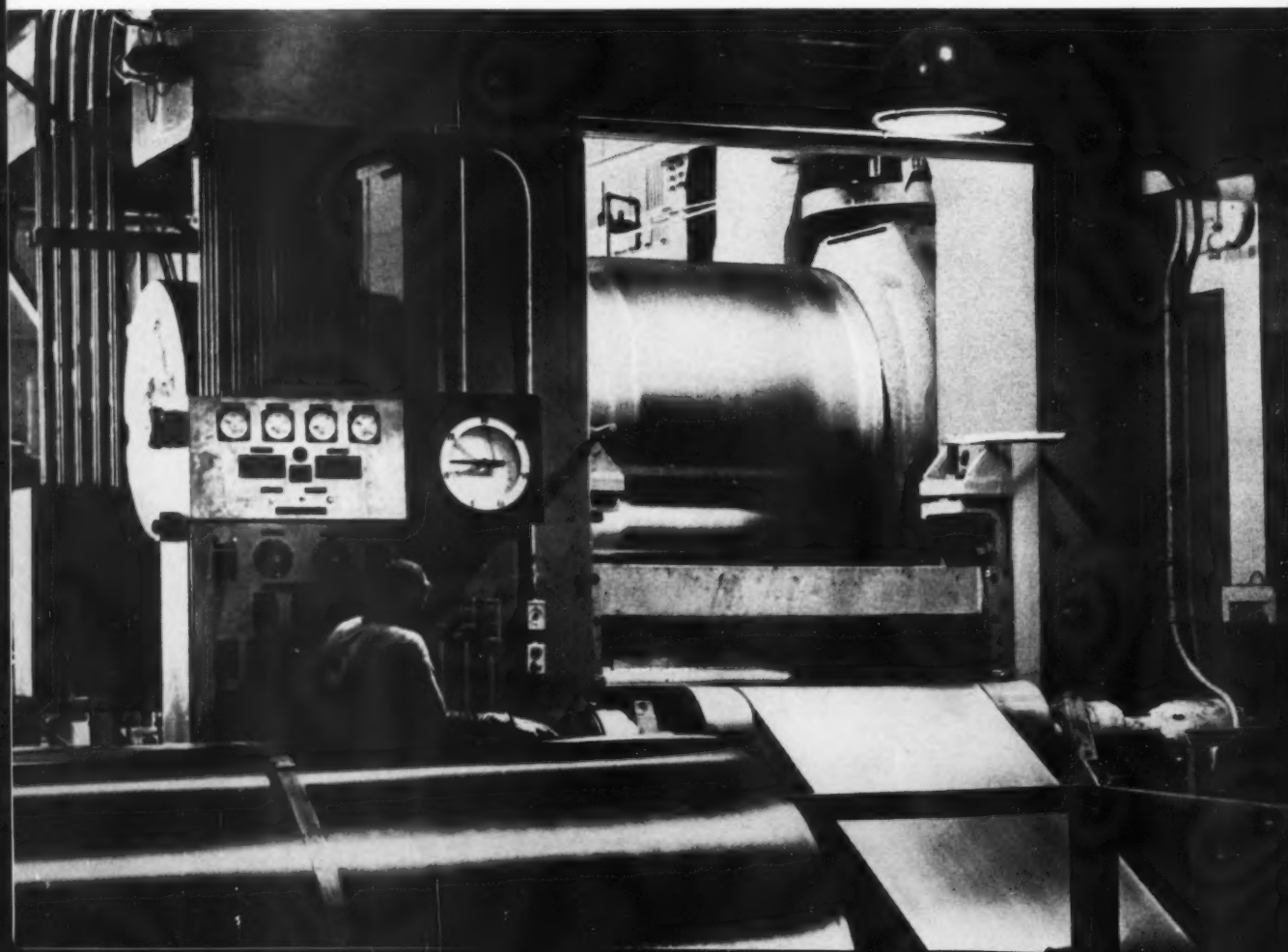
THE KIND OF SHEETS YOU WILL NEED IN THE SIXTIES!

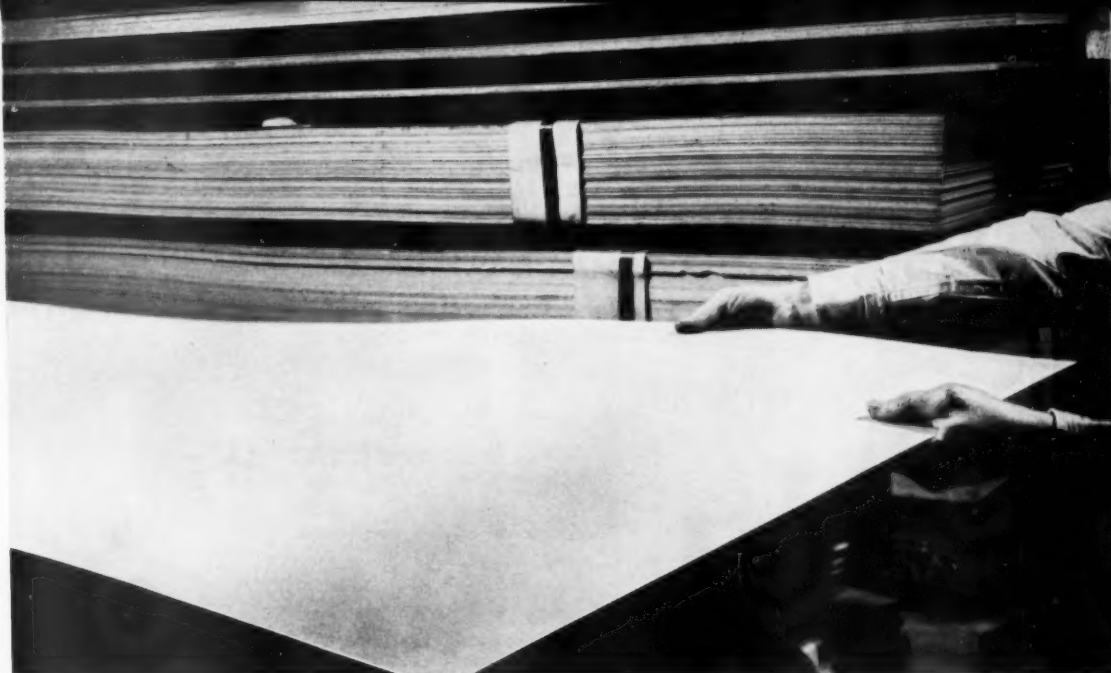
With an increase in cold rolled sheet capacity of almost 125% from 1950, Republic is now spending *millions of dollars more* in anticipating your needs in the sixties.

To be made are improvements and additions that will bring you—the sheet metal fabricator—stainless and specially coated steel sheets of significantly higher quality.

You will get these sheets in the increased range of sizes, types, gages, and other specifications that will be required.

This is what Republic is doing *now* to help you—in the decade ahead—improve design, reduce costs, assure a level of performance currently unobtainable.





Republic already offers you these four famous sheet products . . .

ENDURO® STAINLESS STEEL SHEETS in finishes 1, 2-B, 2-D, 3, 4, 6, 7, and 8. Republic was one of the pioneer producers of this modern metal and today offers stainless flat rolled products in all types, tempers, sizes and finishes—in coils or cut lengths—for virtually any application. Annealed and pickled, polished on one or both sides.

CONTINUOUS GALVANIZED SHEETS are available from Republic in all popular gages and sizes. Non-varying quality gives you easier fabrication. Tight galvanized coating won't crack, flake, or peel under any operation permitted by the base metal itself.

ELECTRO PAINTLOK® SHEETS zinc coated by the Electrolytic process and chemically treated to provide an inert, phosphate film which is an ideal base for paint, lacquer, and synthetic enamel. Available in widths to 60 inches, thicknesses from .0090 to .1083 inches.

GALVANNEALED SHEETS heat treated immediately after galvanizing to produce a graduated union of iron-zinc alloy between the zinc and base metal. An integral part of the sheet, this coating offers maximum resistance to corrosion and fabrication damage, provides a good base for paint.

REPUBLIC STEEL

*World's Widest Range
of Standard Steels and Steel Products*



This STEELMARK of the American Steel Industry is your assurance that a product is made of steel.



REPUBLIC STEEL CORPORATION

DEPT. AA-8735

1441 REPUBLIC BUILDING • CLEVELAND 1, OHIO

Please send more information on:

☐ Stainless Steel Sheets

☐ Electro Paintlok

☐ Continuous Galvanized

☐ Galvannealed

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

Southern SPECIALIZES in



Standard Fasteners for METAL

Regardless of your requirements in sizes, head styles, materials or finishes, Southern Screw stocks the metal working screws you need for faster, more profitable applications.

Southern Screw is a fastener specialist — makes nothing else, stocks nothing else. Over 1,500,000,000 pieces in our Statesville plant, ready to fill any quantity order you want. If you require extra-fast service, shipment can go forward in a few hours from receipt of order.

Send your next order for fast-driving, dependable *quality* fasteners to Southern Screw Company, P. O. Box 1360, Statesville, N. C.

**Manufacturing and Main Stock in
Statesville, North Carolina**

Warehouses:
New York • Chicago •
Dallas • Los Angeles

Tapping Screws • Machine Screws &
Nuts • Stove Bolts • Drive Screws
• Carriage Bolts • Continuous Thread-
ed Studs • Wood Screws



WHAT'S HAPPENING

SMACNA Program Plans Completed

(Continued from page 19)

Saturday, May 28

9:00 a.m.—Ventilating and Air
Conditioning Forum

Duct construction manual

High pressure duct manual

Bidding Procedures—Panel ex-
planation of ideas and plans
for separate bidding and bid
shopping elimination

Testing High Pressure Duct
Systems—Slide projection
panel presentation of appa-
ratus and procedures used by
selected SMACNA members

2:00 p.m.—Planning for the Fu-
ture

Profit Sharing—Panel explana-
tion of profit sharing plans
in use by SMACNA members

Deferred Compensation—Tax
free remuneration for key
employees

Model Sheet Metal Shops

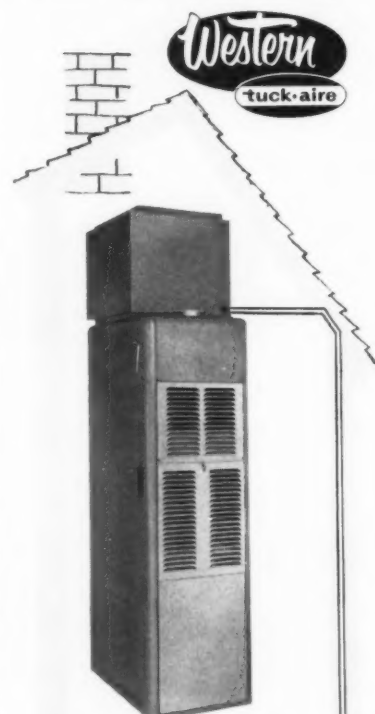
7:15 p.m.—Banquet and floor
show

Furnace Shipments Show Increase

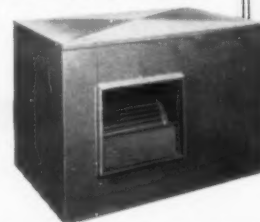
WASHINGTON, D. C. — Shipments of forced air and gravity furnaces during 1959 totaled 1,409,966 units, according to figures recently released by the Bureau of the Census. Of the 1,355,250 forced air units shipped, 1,015,293 were gas-fired; 325,814, oil-fired; and 14,143, coal-fired. Gravity units totaled 54,716, of which 28,800 were gas-fired; 2,079, oil-fired; and 23,837, coal-fired. In 1958, according to the bureau, the total number of furnaces shipped was 1,184,133, of which 1,126,714 were forced air units and 57,419 were gravity types.

(More news on page 28)

The New Look In Year Around Air Conditioning



1. Filtered Forced Air Gas Furnaces
2. Counter-Flo or Up-Flo—Twenty-four Models
3. Heating Capacities—60,000 to 250,000 BTU
4. Cooling Capacities—Two to 7½ Tons
5. Air Cooled Remote Condensing Units
6. Matching Evaporator Coils

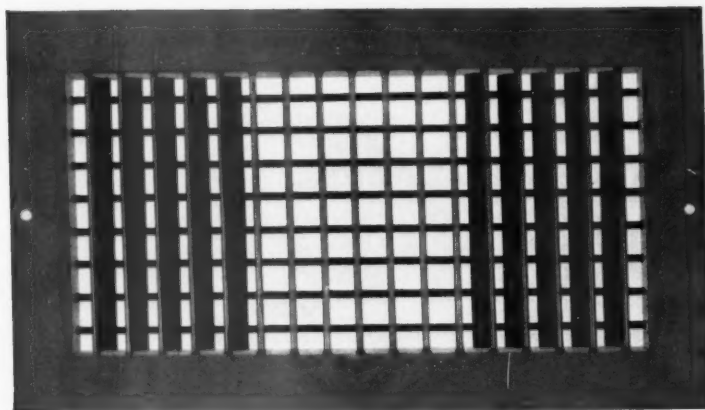


tuck-aire FURNACE COMPANY

2045 Evans Avenue • San Francisco, Calif.

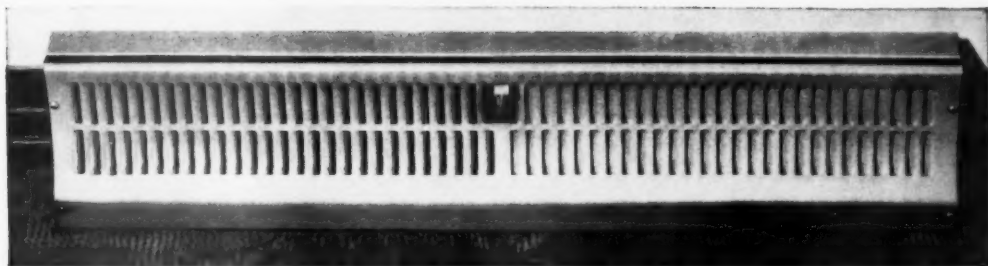
"PIONEERS AND LEADERS IN
AIR CONDITIONING COMFORT"

MIDCO *Excels* IN PERIMETER REGISTERS

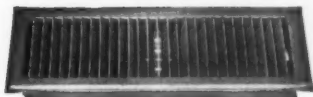


with a
high styled line
in sizes
to meet every need.

No. VHD THERMOFLEX COMMERCIAL REGISTER AND GRILLE. A register that does everything better. Is aero dynamically correct with 11/16 inch adjustable vanes that give positive control of throw and flow.



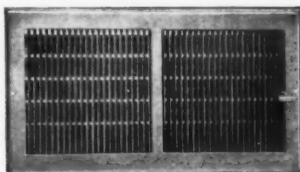
No. 900 OPEN TOP BASEBOARD DIFFUSER. With the grilled front which delivers air to left and right and more air than any other diffuser of similar size. Lengths 17, 24, 30 and 36 inches. Also made with closed top.



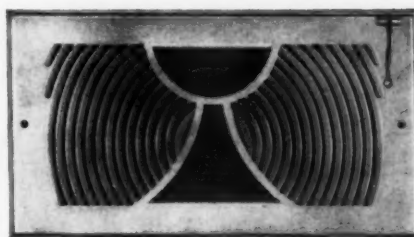
No. 512 PERIMETER FLOOR REGISTER

Sizes:

2 1/4 x 10	4 x 10	6 x 10
2 1/4 x 12	4 x 12	6 x 12
2 1/4 x 14	4 x 14	6 x 14



No. 30 1/4" VERTICAL FIN SIDEWALL DIFFUSER
Comes in any size from 6 x 4 up. Also made with 1/2" vertical fins in similar sizes.



No. 800 SIDEWALL PERIMETER DIFFUSER

The most efficient and attractive sidewall perimeter register on the market, with volume adjustment control and furnished in 10" x 6", 12" x 6" and 14" x 6". Patent No. D179-140.

JOBBER HELPS THAT MAKE SALES
Midco's Jobber Merchandising plan is unsurpassed and some good areas are still open. Jobbers write at once for full particulars.

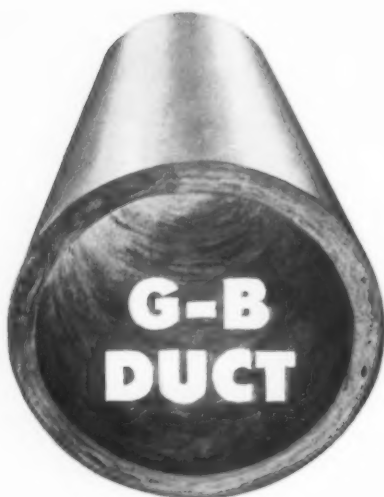


SOME JOBBER OUTLETS
STILL OPEN

MIDCO

REGISTER CORPORATION
1059 GRAND AVE. ST. PAUL 5, MINN.

Makers of over 6000 different register units



**SAVES
YOU**



**MAKES
YOU**



**Give Your Bids a Competitive Price Edge
With G-B DUCT — The "Prefab" Duct That
Cuts Installation Time Almost In Half!**

G-B DUCT, the round, prefabricated glass fiber duct, is appearing in more and more residential and commercial air conditioning and heating bids. The reasons are simple. Contractors have discovered that this performance-proven duct helps them get good jobs, do good jobs, and make good profits.

FAST, FOOLPROOF INSTALLATION

As a material, G-B DUCT actually costs a little more than metal-plus-insulation ductwork, but it can be installed so much faster and cheaper that finished costs are usually lower than those for conventional duct. G-B DUCT comes in 6' ready-to-use sections, in standard sizes up to 18" diameter. Sections fit snugly and swiftly together with standard metal sleeves and vapor barrier tape. Elbows and T fittings are also easily fabricated with a knife and factory-supplied templates. For all practical purposes, homeowner complaints and call-backs are eliminated!

ATTRACTIVE VAPOR BARRIER FINISH

G-B DUCT's uniformly thick walls are covered with an air-tight plastic vapor barrier sleeve, providing a smooth, attractive finish as well as positive protection against sweating and moisture build-up. With vapor barrier tape sealing all seams, a completed G-B DUCT system is neat and clean in appearance.

WINS READY APPROVAL

For good reasons, homeowners and builders are equally enthusiastic about G-B DUCT. There's no question that it saves the homeowner substantial money on fuel and electric bills. "Whisper-quiet" operation of heating and air conditioning systems is another very attractive feature—every foot of G-B DUCT contains millions of tiny sound absorbing cells. G-B DUCT has been approved by air conditioning manufacturers and local building codes for both air conditioning and heating use. It is labelled by Underwriters' Laboratories and therefore, meets requirements for FHA insured loans.

Discover for yourself why G-B DUCT is such an effective competitive weapon! Bid it just once, and you, too, will get good jobs, do good jobs and make good profits.

FOR NAME OF YOUR NEAREST G-B DUCT DISTRIBUTOR,
WRITE

GUSTIN-BACON Mfg Co 
204 W. 10th St., Kansas City, Mo.

Thermal and acoustical glass fiber insulations . . . Molded glass fiber pipe insulation . . . Couplings and fittings for plain and grooved end pipe

Sell Climate by Chrysler



Dealers who sell Chrysler Air Conditioning . . .

don't face insecurity

The publisher of a leading air conditioning trade magazine has reported: "Since 1956, according to our records, one-third of the commercial 'package' air conditioning makers and another third of the residential air conditioning producers have dropped out of the race."

Those are pretty sobering statistics—even in a business as competitive as ours. A lot of dealers have been caught. Perhaps you've been one of them. Or perhaps you're next.

You needn't be—if you handle Chrysler Air Conditioning. We've been in this business since 1934. We're in it for the long haul. And we can prove it to you.

If you're interested in 10 reasons why your future is safer with Chrysler, send for the booklet, "It will pay you to take a long look ahead . . . with Chrysler Airtemp." Better yet, ask your Chrysler Distributor for a copy.



Airtemp Division, Chrysler Corporation, Dept. N-50, Dayton 1, Ohio



Please rush me a copy of
the "Long Look" Booklet

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ COUNTY _____ ZONE _____ STATE _____

Attendance High at First National Electric House Heating Exposition

CHICAGO — Attendance at the First National House Heating Exposition, sponsored by the National Electrical Manufacturers' Association, totaled 2011. Power company employees accounted for 28 percent, electrical distributors 22 percent, electrical contractors 14 percent, engineers 7 percent, and component manufacturers 7 percent. The remaining 22 percent included architects, municipal employees, university students, members of the press and other interested persons.

On display were electric furnaces, heat pumps, insulations and direct resistance heating equipment. Speakers at the symposiums, which covered a three-day period, presented information on methods of determining heat losses, equipment selection, types of equipment and applications, wiring specifications, safety standards, and control of equipment.

Ways and means of influencing the public to favor direct resistance types of dispersed electric heating equipment were offered by speakers. R. L. Boyd, Edwin L. Wiegand Co., said:

"Actual experience is a more effective selling tool than a well turned phrase or a theory of how the system should operate. If we paid less attention to trying to tell each other (within the electric industry or within the heating industry) what kind of system we should be promoting, and spent more time finding out what the public likes, we would reach and exceed our quotas more easily, and we would have happier customers. User testimonials and user billing records have been, and bid fair to continue, making fools of armchair theorists and conventional heating theory.

"While there is general agreement that the operating cost of a

central electric system will be higher than that of a dispersed electric system, whether that cost amounts to 2 percent or 12 or 25 or 50 percent higher is more controversial. While experience records of a few jobs may be indicative, statistics on several hundred would be required to establish a pattern tending to wipe out the actual variation of up to 100 percent in energy use attributable primarily to living habits of occupants. And none of the above percentages are enough to discourage purchase of a really superior system.

"The type of system with the largest number and highest percentage of enthusiastically satisfied users is, naturally, the most popular system and will influence the sale of more and more similar systems. Thus we can generalize confidently that the systems whose proponents sell quality jobs will sell more and more jobs. And the jobs that are sold will determine who sells the equipment and what kind is used.

"Each individual in the electric heating industry would do well to review the advantages and dis-

(Continued on page 34)

How Family Income Affects Cooling Sales

WASHINGTON, D. C. — Better than nine out of 10 of the families that purchased air conditioning during 1959 (either individual units or central systems) had incomes of \$5000 or more, according to a marketing study recently released by U.S. News & World Report. Families with incomes of \$7500 or more, the survey indicates, account for more than half the customers for air conditioning, while those with \$10,000 or more account for one-third.

Publish Silver Shield Dealer Newsletter

CLEVELAND — Activities of Silver Shield dealer-contractors in various parts of the country are now being reported by the National Warm Air Heating and Air Conditioning Association in the "Silver Shield Dealer Newsletter." The association requests all Indoor Comfort Bureau secretaries to send copies of meeting minutes as well as news of local activities being planned to NWAHACA headquarters to be used in preparing future issues of the newsletter.

One method of obtaining publicity for Silver Shield was reported by the Indoor Comfort Bureau of Delaware Valley, Inc. (Pa.) The Delaware Valley group

(Continued on page 34)

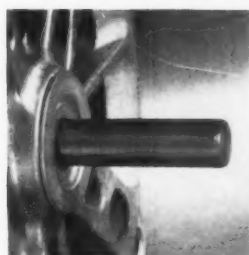
Building Groups War On Outdated Codes

WASHINGTON, D. C. — Overcoming problems presented by outdated and multiple building codes is the objective of a coordinated program recently launched by the National Association of Home Builders, the Associated General Contractors of America, Inc., the American Institute of Architects, and the National Society of Professional Engineers. NAHB president Martin L. Bartling Jr. said that building codes are essential for the protection and health of the public. "But," he pointed out, "codes that reflect only the building techniques and materials of a bygone era perform not a service, but a disservice to their communities. They impose unnecessary and expensive requirements that have no validity in today's and tomorrow's building technology."

(More news on page 34)



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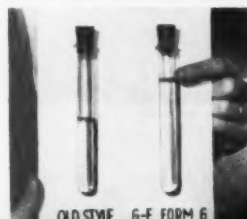
SHAFT PROTECTION—new gun-metal-like treatment of shaft resists rust so the blower is always easy to remove.

FAST ROTATION CHANGE cuts your inventory in half. Simply reverse leads ("A" to "B").



AIR-SHIELD DESIGN transmits heat swiftly, greatly reducing "trip-outs" that result in time-consuming service calls.

4-YEAR LUBRICATION at factory practically eliminates reoiling. Motor has doubled oil supply.



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Contributing to the motor's long life are a rust-resistant shaft, a special air-shield design, four-year lubrication at factory (see photos), a wear-resistant switch, and moisture-resistant Mylar* polyester film insulation.

All these extra-value features are yours when you specify "G-E motors" on the oil burners you buy. They're also ideal for replacement purposes. For more information, write Section 738-06, General Electric Company, Schenectady 5, N. Y.

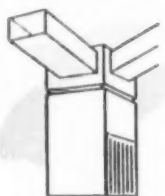
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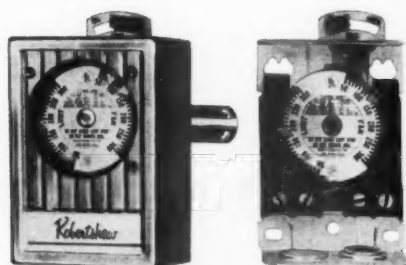
HEATING

NEWS IN

YEARS



All new, full-load Fan and Limit Switch offers you more new features!



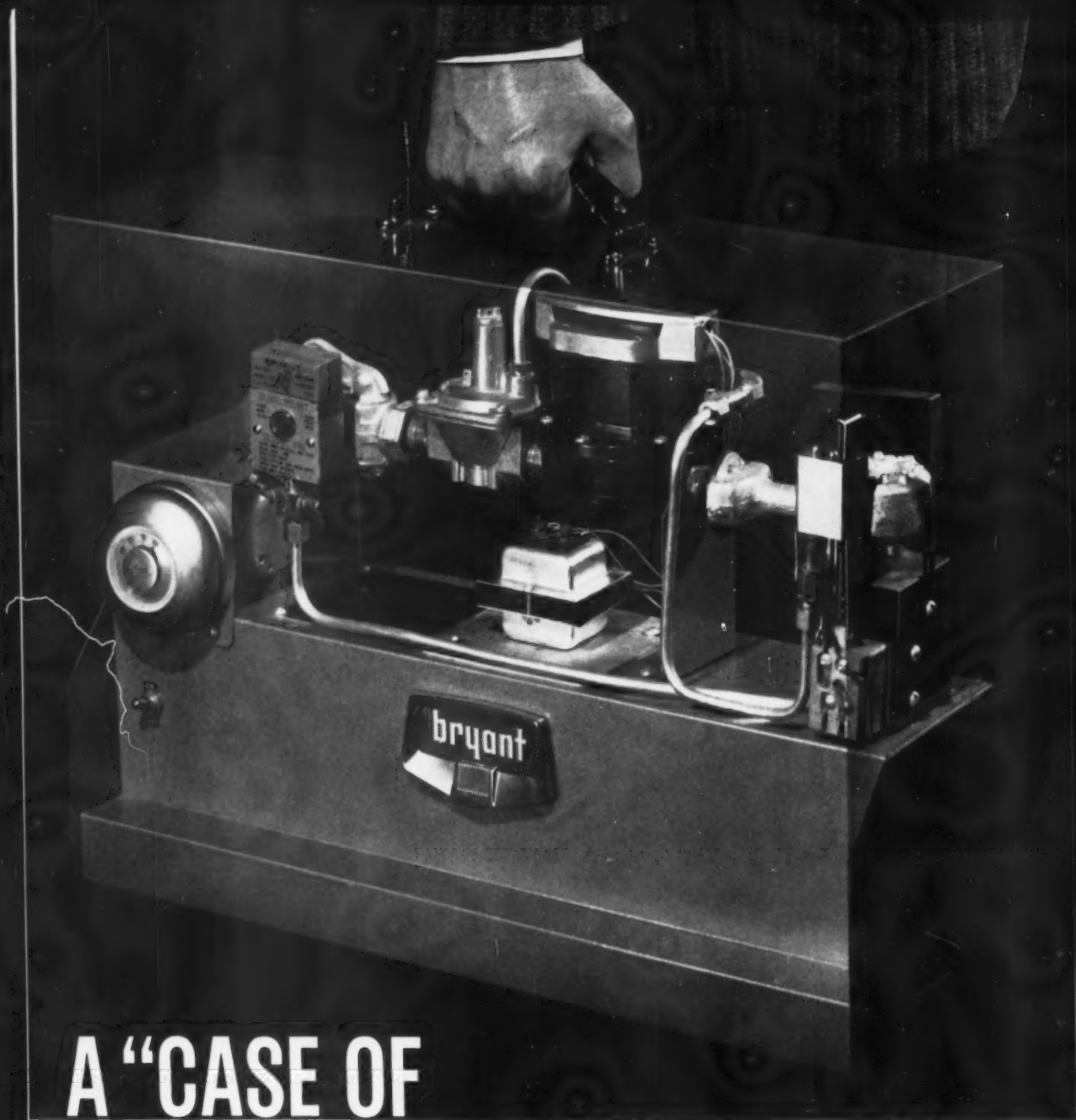
Newest of the new controls we promised you in 1960—the Robertshaw *full-load* ($\frac{3}{4}$ hp-14 amp.) Fan and Limit Switch incorporates many new engineering ideas to save you inventory and installation costs... to give you and your customer the ultimate in reliability! Check these exciting new features—Color coded dial settings and terminals, high no-short terminal barriers, element temperature indicator, single helical element, no-creep temperature set, 2-second limit lock or stop, “add-on” summer fan switch, “no-bounce” self-cleaning switch—roller actuator for consistent and smooth operation, protectively enclosed switches, interchangeable mounting, snap-on hammer-tone gray finished cover—available in four standard element lengths and many model combinations. FOR MORE INFORMATION CONTACT:

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GENERAL CHEMICAL DIVISION

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WHAT'S HAPPENING...

(Continued from page 23)

New Housing, Modernization to Bring Big Future for Gas-Fired Equipment

WHITE SULPHUR SPRINGS, W. VA.

— "In the next five years we look for new housing, home modernization and equipment replacement to create a situation where the average home will be using at least five major items of gas equipment." This prediction was made by Edward A. Norman, president of the Gas Appliance Manufacturers Association, at the group's 25th annual meeting. Shipments predicted for 1960 by chairmen of the association's individual product divisions include 1,221,200 gas furnaces, up 11.1 percent from last year; 164,200 gas conversion burners, up 7.2 percent; 3,154,700 water heaters, up 4.6 percent; and 475,800 vented recessed wall heaters, up

3.6 percent over last year.

Mr. Norman, who is also president of Norman Products Co., Columbus, predicted that new housing starts, which are closely linked to equipment sales, will top the 1959 total and may reach 2,000,000 a year by 1965.

New concepts developing through gas industry research in the past few years, according to Mr. Norman, include:

1) Two methods of creating electrical energy for furnace blowers without plugging into the home's power line.

2) A gas-powered free piston engine that will furnish power for home air conditioners.

3) A gas power center that air conditions the entire house.

Silver Shield Dealers Get Newsletter

(Continued from page 28)

engaged a booth at the Philadelphia Home Show which it used to demonstrate the advantages of air distribution systems in general and of Silver Shield systems in particular. Working models showed the operation of furnace, cooling coil, electronic air cleaner, perimeter diffusers and central weather controls. Also on display was an electric warm air furnace.

Program materials for Silver Shield members now available or scheduled for early production, NWAHACA says, include the following:

Consumer Selling Book — A visualized, step-by-step selling story directed at consumer prospects.

Builder Selling Book — A similar presentation for use in selling

Home Ventilating Institute Names Secretary

CLEVELAND — Arthur J. Tuscany Jr. has been appointed executive secretary of the Home Ventilating Institute, an association of kitchen exhaust fan manufacturers. Mr. Tuscany is located at the institute's headquarters, 812 Engineers Bldg., Cleveland 14.

home builder prospects.

Indoor Comfort Bureau Organization Guide — A guide for organization and operation which is kept up to date with additions and revisions.

Management Guide Posts — A training course based on manuals of practical business management covering record keeping, cost accounting, selling, etc.

BRI Speakers Discuss Air Cleaning

NEW YORK CITY — Air Cleaning and Purification was one of the topics under discussion at the recent spring conferences of the Building Research Institute. Speakers included H. L. Barnebey, Barnebey-Cheney Co., who discussed Odors: Classification, Detection and Removal, and W. L. McGrath, Carrier Corp., who presented New Concepts for Obtaining Better Air Quality.

Electric Heating Show Stirs Wide Interest

(Continued from page 28)

termine who sells the equipment and what kind is used.

"Each individual in the electric heating industry would do well to review the advantages and disadvantages of each form of electric heater (of which there are many more than just central or dispersed types of units) and determine for himself when and where he will advocate the use of each type unit.

"The question of whether central or dispersed electric systems will be the accepted form of heating in the years ahead — which will evidently see electricity become the predominant heating energy source — will not be decided by debate, or research, or by popular or technical writing. The answer will depend on what the public buys. The public will buy what is sold. The answer will depend on what is sold and installed as quality jobs, intelligently applied to result in genuine comfort at economical and competitive owning and operating costs. This does not mean cheapness — it means quality at reasonably competitive prices."

PROFIT WITH THE LEADER OF THE CUSTOM HEATING MARKET SELL THE **NIAGARA** SERIES 50 AIR CONDITIONER

Quality and performance are the two most important factors required today to meet the heating demands of the replacement and custom heating markets.

The NIAGARA Series 50 Air Conditioner more than fulfills these two requirements.

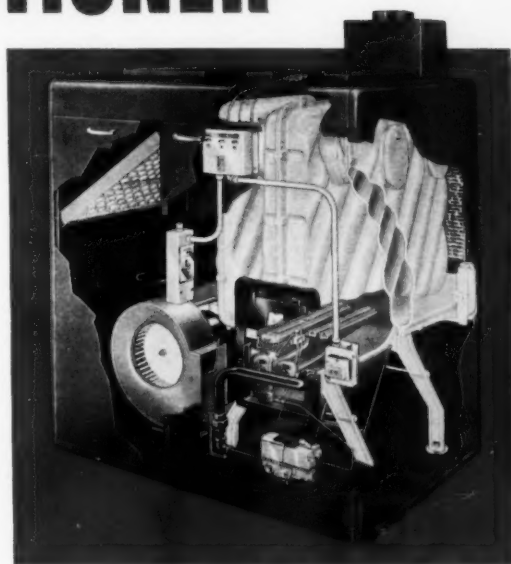
Here is truly an exceptionally deluxe furnace with *PROVED DEPENDABILITY* and *PROVED ECONOMY*.

One of the most significant features of the NIAGARA Series 50 is the famous NIAGARA cast-iron heat exchanger with copper-chromium-iron alloy combustion chamber, guaranteed for 20 years.

In addition, a 3-speed direct-drive blower, completely automatic controls, and a rich, modern-styled cabinet go together in making the NIAGARA Series 50 the finest heating unit available for the discriminating, quality-conscious buyer.

For summer cooling a NIAGARA refrigerated air-cooling unit can be added to work in conjunction with the Series 50 furnace.

Available in various capacities, the NIAGARA Series 50 will give customers years of utmost comfort with trouble-free operation—and will provide you with a greater profit.



Cut-a-way view of NIAGARA Series 50



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Right now there are opportunities for choice NIAGARA dealerships.

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NIAGARA SELLS A COMPLETE LINE

The NIAGARA Series 70 furnace line includes upflow, counterflow, basement or horizontal models, that burn gas or oil, and are available in capacities to fit every requirement. This budget line is built to the same high standards of quality as the Series 50.

NIAGARA Series 70 Basement Model

NIAGARA FURNACE DIVISION

THE FOREST CITY FOUNDRIES COMPANY

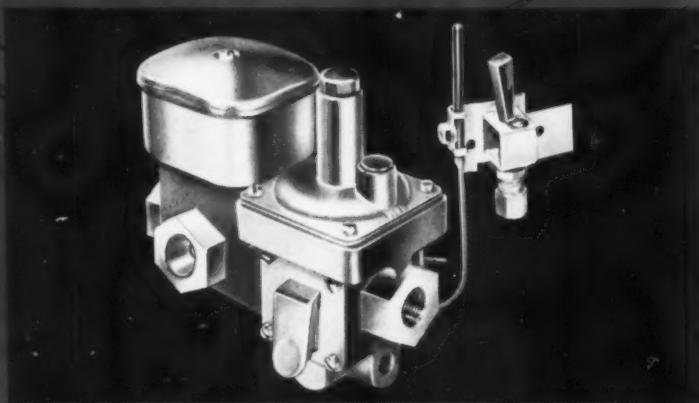
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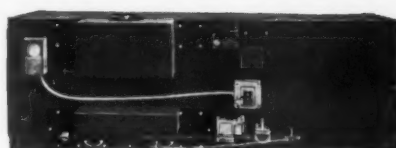
Gas Furnaces

Upflow — Compact, completely assembled and wired units — 75,000 to 200,000 Btu.

Counterflow — Completely assembled and wired — 75,000 to 150,000 Btu.

Horizontal — Low and compact, assembled and wired — 80,000 to 140,000 Btu.

Basement — Compactly packaged, heavily constructed, easily assembled — 105,000 to 260,000 Btu.



New! Horizontal Gas Furnaces Designed with Add-On Cooling in mind! Low and Slender! 4 Sizes!

Interior view of Upflow Unit, showing the rugged construction and uncomplicated design



HEAVY CONSTRUCTION — Heavy-gauge, long-lived Heating Elements and heavy-gauge, die formed Cabinets give Luxaire Units unsurpassed durability!

EYE APPEAL — Simple, pleasing cabinet styling typifies the uncomplicated design and construction within every Luxaire Unit!

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EXTRA-COMPETITIVE PRICING — You can depend on Luxaire prices because they are consistently competitive — consistently lower with respect to the excellent qualities available with Luxaire!

If you have a problem of choosing between a low price and excellence, see your Luxaire jobber, today!

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Assembled and Wired — Winter Air Conditioners with Refractory Firebox — 78,400 to 112,000 Btu.

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Horizontal — Heating element, blower and motor assembled in casing—89,600 to 224,000 Btu.

Basement — Heavily constructed, readily assembled — 84,000 to 224,000 Btu.



New! 3 new sizes of Horizontal Furnaces! Low and Slim with increased Air Handling!



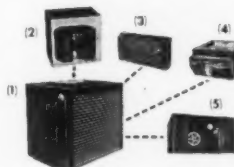
Interior view of Upflow Unit, showing Round Heating Element and Refractory Firebox!



Gas Fired Unit Heaters, 5 Models



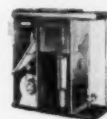
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Winter Air Conditioners Gas Fired or Oil Fired

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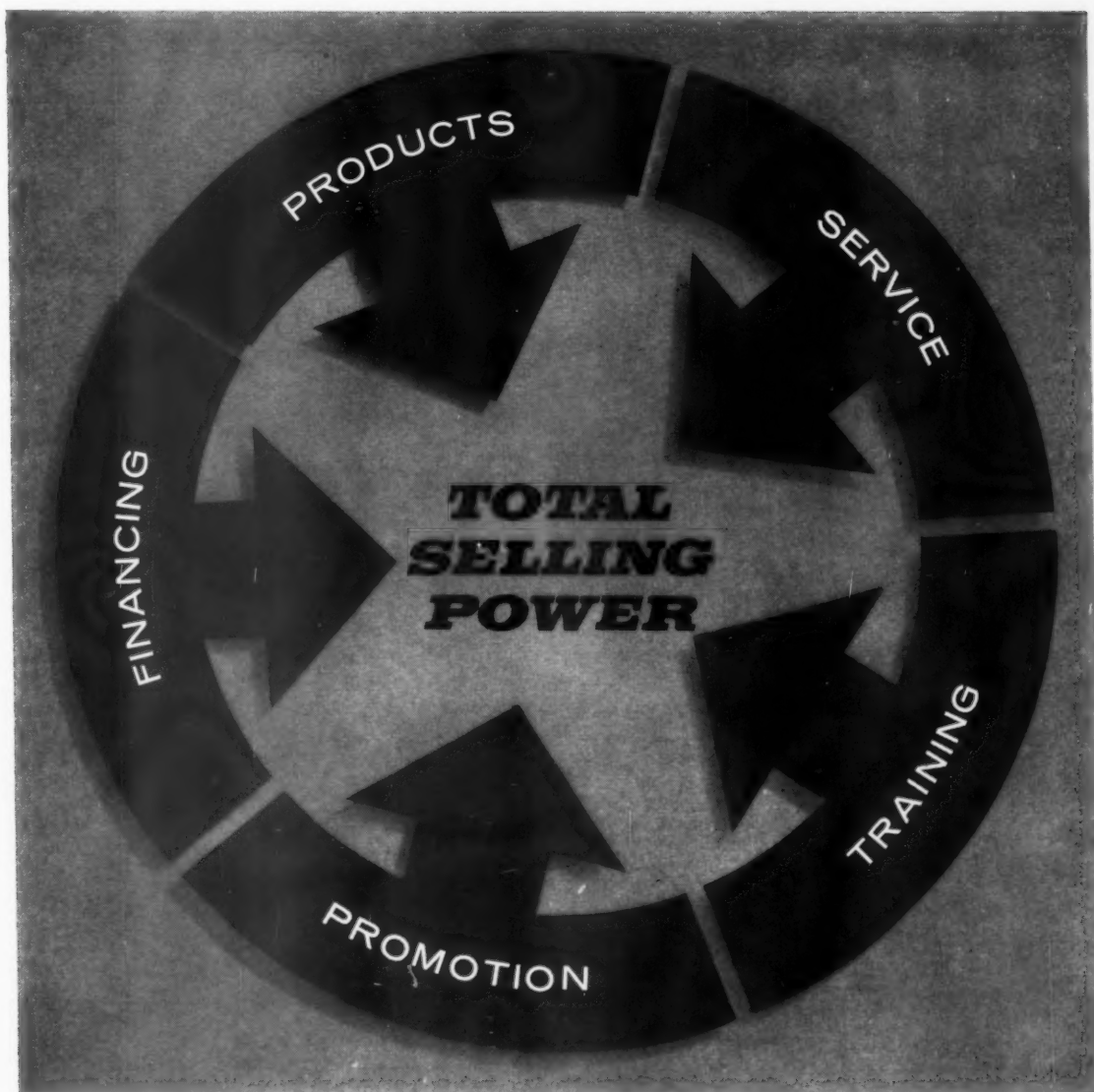
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Commercial Air Conditioning

Air-Cooled Systems—self-contained, free-standing and split systems. Water-Cooled Systems—free-standing and split systems. Heat Pumps—self-contained and split systems. Precipitron Electrostatic Air Cleaners.

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Future Growth Depends on "Inquiring Mind"

We were recently asked to participate in a convention panel discussion on the theme of "Plan for the future or die." Many excellent points were brought out by the panelists as they outlined steps that can be taken by a dealer-contractor to direct his business toward financial security in the years ahead.

If the many proposals were summarized into one overall thought, that thought would be: Success in the future depends upon management's ability to stay even with, or be ahead of, the trends of the industry.

Achieving this enviable position depends to a great extent on possessing an "inquiring mind," which, as Harlow H. Curtice, former president, General Motors Corp., said, "is never satisfied with things the way they are, but is always seeking ways to make things better and do things better. It assumes that everything and anything can be improved."

An inquiring mind will help the warm air heating-air conditioning dealer-contractor and the sheet metal contractor to develop the ability to face and solve the many problems that must be overcome to meet the various kinds of competition that the future will bring.

Looking back along the path of this industry's history, we can see that many changes have taken place during the past 15 years, and that there are trends which indicate paths the future will take.

If asked to mention a few of the changes that have occurred and others now in process that must be adopted by those who wish to remain competitive, we would point to one outstanding example — the "automation" of sheet metal ductwork fabrication. Many new tools have been developed to make it possible to fabricate ductwork faster and at lower cost. The development of Pittsburgh lock forming machines started this phase of mechanical fabrication, and numerous other "automation" machines have since been developed.

Another change that has been gradually taking place, and which is going to develop rapidly in the future is the use of people trained to specialize in selling the industry's products to the public. Many heating and air conditioning dealer-contractors have been doing this for years. Many others will soon follow suit in order to attract the volume of business necessary to produce a profit compatible with the capital investment in the firm.

Some sheet metal contractors have used sales engineers to develop more business. This practice is growing, and trends indicate that as the sheet metal contracting business becomes increasingly diversified, more and more people will be assigned the job of uncovering business potential in plants, large buildings, stores, and other establishments.



Mechanized Duct Fabricating Plan Produces High Volume at Less Cost

Fabricating technique developed by this progressive firm and their journeymen made it possible to up production of quality work, increase employees' compensation and develop new products for the construction industry



COORDINATED DRAWINGS and plans are described by Fay Jayne (right) to construction superintendent L. L. Pierce. Coordinated drawings save time and tend to reduce confusion on large construction jobs. Drawings also eliminate repetition of showing detail on general drawings

AUTOMATION AND MECHANIZATION of the fabrication of sheet metal products is increasing rapidly at the contracting level — this is especially noticeable in the many new tools being developed for the industry each year.

The trend toward increased utilization of power tools and equipment benefits the industry by making its products and services more economically purchasable. The cost of air conditioning large buildings, for example, would be prohibitive if ductwork still had to be Pittsburgh lock formed in hand brakes, as it used to be. Yet development of the Pittsburgh lock forming machine was but one step along the road to mechanization of manual operations in sheet metal fabrication.

Many other techniques have since been developed — by progressive sheet metal contractors — which have further reduced production costs for quality work, thereby permitting increased compensation for employees and the development of new and expanding markets for the industry.

The new shop of the Wm. H. Singleton Co. of Springfield, Va. (located on the outskirts of Washington, D. C.) is an outstanding example of the application of progressive principles to sheet metal fabricating operations.

Growth Requires New Facilities

This mechanical contracting firm was formed in 1948, when it purchased the assets and contracts of the eastern branch of the Mehring and Hanson Co. By 1956, the company's operations were rapidly outgrowing the capacity of its sheet metal shop. The present shop is the result of a management decision, in 1957, to build an entirely new facility to take full advantage of improved tools and fabricating techniques.

Key personnel were assigned to explore all possibilities and to develop detailed plans for the type of operation that would best serve the company's needs.

An example of the magnitude of the company's needs is afforded by the production requirements of just one of its projects, undertaken in 1957 — the air conditioning of the new U. S. State Department Building in Washington, D. C., which occupies four city blocks and is second in size only to the Pentagon Building. This project alone, now being completed, required 3½ million pounds of ductwork and 5000 mixing boxes for the world's largest double-duct high velocity air conditioning system.

In keeping up with the pace of general construction on this and other large installations, the new facilities of the Singleton Co. have been put to good use. During periods of peak activity, the output of fabricated ductwork has regularly exceeded 100,000 pounds per 40 hour work week.

Mechanized Equipment

Among the various new production schemes being utilized is an automatic decoiling and shearing line, which permits purchasing sheet metal in 10,000 pound coils to secure the benefits of a minimum of scrap. This line consists of five basic components:

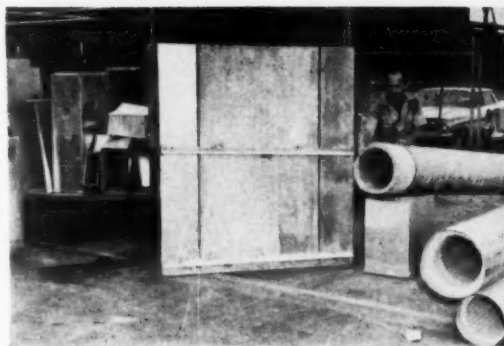
- 1) A coil rack, which holds one coil each of four different gages of sheet metal.
- 2) A straightening roll unit, which pulls metal from the coil, levels it, and moves it through the shear.
- 3) A pneumatically operated automatic power shear (12 gage capacity).
- 4) A conveyor unit which stacks the cut pieces on a cart.
- 5) An automatic control system which permits the operator to set up — on a central console unit — the dimension to be cut, the number of pieces required and the speed at which the work is to be handled. (Because of the time required for the shear to complete a cutting cycle, small dimensions must be handled at a slower speed through the line).

Special Press Brake Forms Ducts

Sheared pieces for conventional small sizes of ductwork are moved by cart from the end of the decoil line to subsequent fabricating operations.

Shearing pieces for large sizes of duct (which are too long to be handled on the press brake) can be moved directly from the decoil line, by temporary conveyor section, to a special double bending brake. The metal is positioned by conveyors and formed around the head of the brake, which then opens on one end for removal of the duct section.

The Singleton shop also includes an automatic welding machine for making longitudinal joints on



VARIETY OF DUCTWORK assembled and ready for shipment to job site. Round duct at the right is insulated and will be used in a high velocity system. Rectangular duct in the center will be used in high velocity duct system. The two black streaks near the sides are welded seams. Ductwork stacked on cart at left is for use in a low velocity air distribution system

both rectangular and round high pressure ducts. This machine has a clamping device which holds the two edges securely in position without the necessity of tack welding — the welding head then automatically travels the length of the seam.

Handling Large Installations

On large installations, such as the U. S. State Department Building, every effort is made to achieve the benefits of quantity fabrication of duplicated components of the system. This often involves the use of special jigs and fixtures and the stockpiling of repetitive items.

In recognition of the steadily increasing complexity of contract work, the Singleton Co. adopted — in

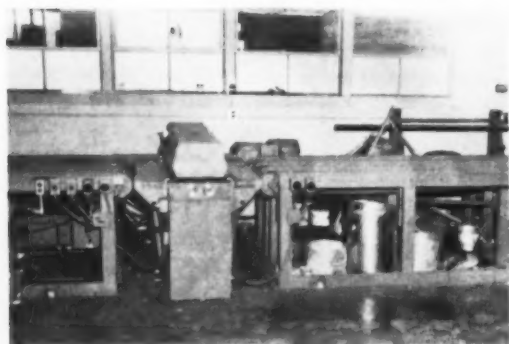


JIG DEVELOPED BY MECHANIC for fabricating special hanger parts is observed by L. L. Pierce, construction superintendent of the Singleton Co.

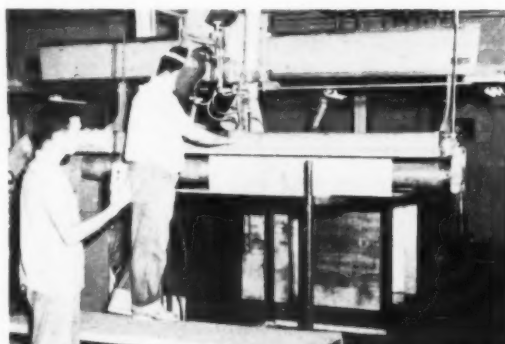
Planning and coordination between office, shop and field permits large portions of the work to be fabricated, sub-assembled and stockpiled while the general contractor is performing the early stages of construction



COILED SHEET STOCK is used for fabricating ductwork to reduce scrap and take advantage of the lower cost of material when purchased in coil form. This rack holds one coil each of four different gages of sheet metal



AUTOMATIC POWER BRAKE is capable of braking 10 ga galvanized sheet metal in four operations to form square or rectangular ducts in one operation. Conveyors position the metal around the head of the power brake



AUTOMATIC WELDER capable of welding at speeds up to 20 fpm is used to seam all ducts fabricated for high velocity duct systems. A clamping device holds the two edges securely in position without the necessity of tack welding

1957 — an organizational structure designed to take full advantage of the specialized talents and experiences of individual employees.

Five Departments Share Responsibility

Appropriate authority and responsibility are now delegated to five major departments — Sales, Estimating, Procurement, Construction and Accounting.

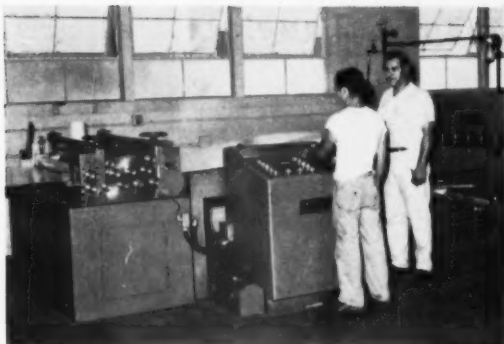
The new sheet metal shop procedures were developed by the Construction Department's own supervisory personnel, under the overall direction of Lewis L. Pierce, executive vice president, who worked for 10 years as a field engineer and project manager before being moved into the office as construction manager.

In addition to shop facilities and field supervisory personnel, the Construction Department also includes

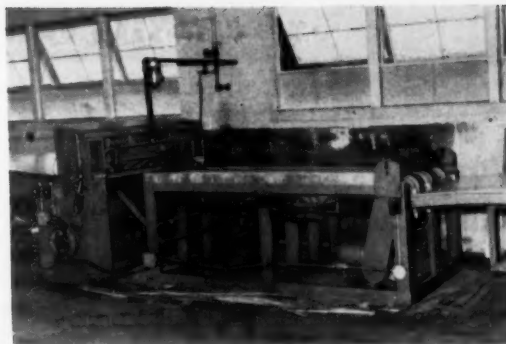
a Project Engineering section and a Coordination Department. Coordination prepares large scale detailed working drawings which assimilate the requirements of the contract architectural, structural, electrical and mechanical plans and specifications, local codes, manufacturers' data and job material requisitions. The result is a condensed and readily usable source of detailed information, as required for accurate and efficient shop and field execution of the work.

Operation Permits "Head Start" Advantage

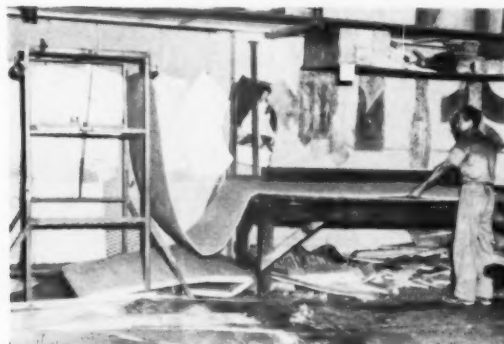
This type of planning and coordination between office, shop and field permits large portions of the work to be fabricated, sub-assembled and stockpiled while the general contractor is performing the early stages of construction. For example, on one project



AUTOMATIC STRETCHING and leveling equipment at left is coordinated at central control panel. Supervising the operation is Charles Moreland (right) shop foreman



AUTOMATIC POWER SHEAR is capable of handling up to 10 ga galvanized sheets at speed of up to 74 fpm. Sheared sheets fall onto endless fabric conveyor belts which move them to their next work position



DUCT INSULATION is trimmed to required size after being rolled out on the bench. Rack at left has been designed to support four rolls of insulation which is stored on shelf above the work bench



ADHESIVE is sprayed on the inside of completed duct sections, after which the precut insulation is pressed into position. Insulation for the duct is laid against the outside where the mechanic can reach over, pick it up and press it against the newly adhesive-sprayed interior of the duct

recently completed by the Singleton Co. (6½ million dollar mechanical contract for the West Virginia University Medical Center in Morgantown, W. Va.) more than one-third of the required total quantity of sheet metal ductwork was stockpiled on the site, sub-assembled, by the time the general contractor had completed foundation work and started erection of his structural steel. The cost advantages afforded by this type of "head-start" are obvious to everyone engaged in the contracting business.

What Makes Success Possible

In commenting on his firm's progress and accomplishments, Mr. W. H. Singleton, president and general manager, says, "No success is possible, of course, without qualified personnel with practical experience. Credit for such experience is due in a large measure

to the firm of Mehring and Hanson, from which many in this organization gained much of their knowledge and encouragement. To that original group have been added associates whose skills and abilities have been outstanding. Both of these groups have maintained a rewarding devotion to each other with the singleness of purpose to do a good job — come what may — that has given our company the success to which it now points with justifiable pride."

< < < < < < > > > > > >

Fabricating sheet plastic material for duct systems, as you will see in your June issue of *American Artisan*, has become a specialty item for sheet metal contractors.

Gieske Sheet Metal Co., Kansas City, has found it could easily adapt the skills and experience of its journeymen to the tools used for plastic work.

HUGH REID'S SHEET METAL PATTERN

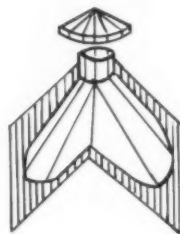
How To Develop:

A Roof Peak Gravity Ventilator

Developing a true shape by following practical shop methods of fabrication would not justify the added cost of the work and time required

Can you develop this pattern in 60 minutes?

Here's a new and accurate approach to the development of sheet metal patterns that will cut costly layout time. The method applied to this month's fitting can be used as a guide to develop related patterns and solve other problems encountered at the layout bench



IN STUDYING the pattern solution for the roof peak gravity ventilator, it will be noted that there are two problems, a weather cap and a cone cut at a double angle.

Both problems are solved by a simplified radial line method requiring a half front view drawing from which all the true length lines are developed for the pattern layout.

In the pictorial drawing, a flanged base plate is shown. The practical shop method of fabrication is to flange the plate to the required shape, place the tapered section on the plate in its given position and mark the shape to be cut out. This true shape could be developed but the work and time involved for layout would not justify the added cost.

The time required to layout the patterns for the

NOTE: THESE PATTERN dimensions should be multiplied by the predetermined ratio figure to produce the actual size of the fitting needed

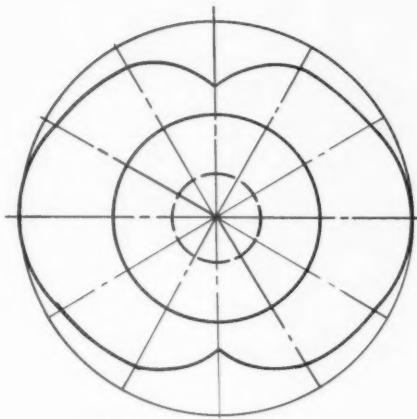


FIG 1- PLAN VIEW

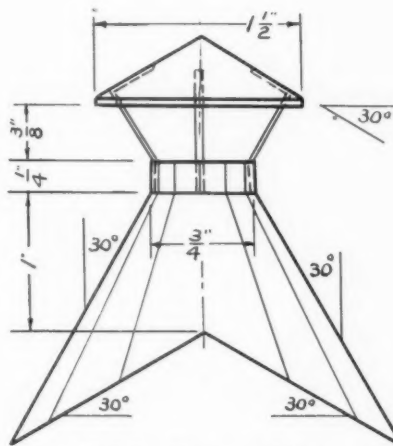


FIG 2- FRONT VIEW

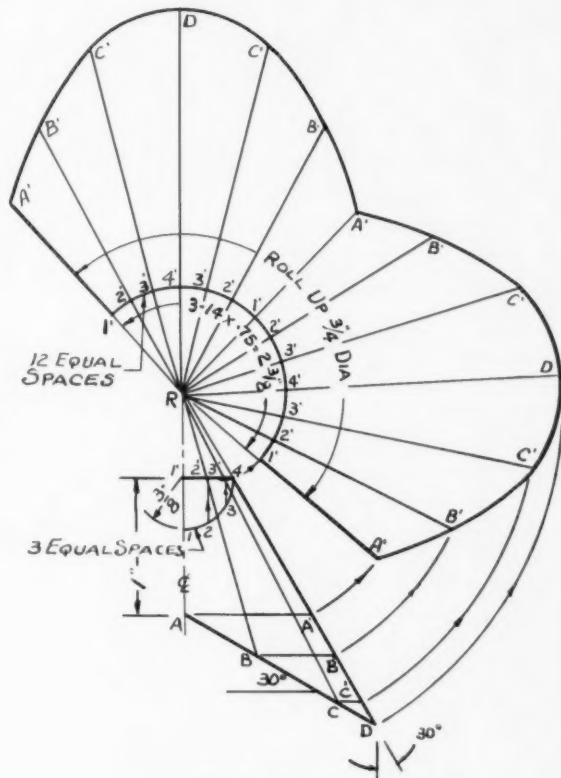


FIG 3- HALF FRONT VIEW
& TAPER SECTION LAYOUT
SIMPLIFIED METHOD

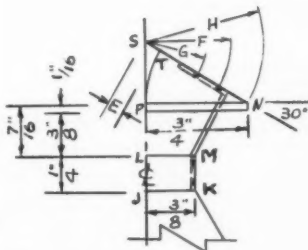


FIG 4- SIMPLIFIED
CAP DRAWING.

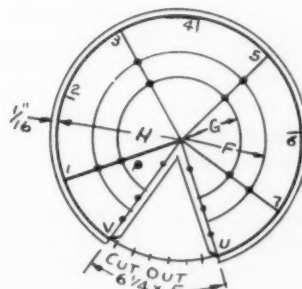
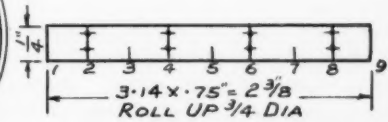


FIG 5 WEATHER CAP
PATTERN



COLLAR PATTERN- FIG 6

Pattern solution shows how to overcome the problem of developing a weather cap and a cone cut at a double angle with a simplified radial line method

tapered section, and the cap by the simplified method should not exceed one hour.

Given the plan view (Fig. 1) and the front view (Fig. 2) of a roof peak gravity ventilator, the following is a step by step analysis of the pattern problem solution.

Taper Section Layout, Fig. 3 —

a) Draw a vertical center line and label the bottom extremity as point A. Above point A measure the given 1 in. length and locate point 1'. Draw a short perpendicular line to the right of point 1'. Measure $3\frac{3}{8}$ in. on this horizontal line and locate point 4.

b) With point 1' as center and radius 1'-4, draw a quarter circle below line 1'-4. Divide the quarter circle into three equal spaces and mark the points as 1, 2, 3 and 4. From points 2 and 3 draw lines upward and parallel to the center line to intersect line 1'-4. Mark these as points 2' and 3'.

c) Draw a 60 deg line below and to the right of point 4. From point A draw a 30 deg line below and to the right to intersect the line drawn from point 4. Label the intersection point of the lines as point D. Extend line D-4 upward to intersect the center line. Mark this as point R.

d) Draw lines from point R through points 2' and 3' to intersect line A-D. Mark the intersections as points B and C. From points A, B and C, draw lines to the right to intersect line 4-D. Mark the intersections as points A', B' and C'.

e) With point R as center and radius R-4, draw about a 200 deg arc to the right and above point 4. From point R draw a work line to the right and above line R-D. Mark the intersection point of the 200 deg arc and the work line as point 1'. Calculate the circumference of the small end of the cone by multiplying the given $3\frac{3}{4}$ in. diameter (Fig. 2) by 3.14 and measure the product ($23\frac{3}{8}$ in.) around the arc to locate a second point 1'. Divide the arc 1'-1' into 12 equal spaces and number the points as 1', 2', 3' and 4' as shown. Through the points draw extended lines from point R.

f) With point R as center and radius R-A', draw an arc to intersect all three extended lines R-1'. Mark all three points as A'. With R-B' as radius, draw an arc to intersect all four extended lines R-2'. Mark all four points as B'. With R-C' as radius draw an arc to

intersect all four extended lines R-3'. Mark all four points as C'. With R-D as radius draw an arc to intersect the two extended lines R-4'. Mark both points as D'. Through the developed points draw the pattern outline.

Simplified Cap Drawing, Fig. 4 —

a) Draw a $3\frac{3}{8}$ by $\frac{1}{4}$ in. rectangle and mark the corners as points J, K, L and M. Extend the vertical line J-L. Above point L measure $7/16$ in. and locate point P. Draw a line to the right of point P and parallel to line L-M. On this line measure $3/4$ in. from point P. Mark the point as N. From point N draw a line at 30 deg to line P-N to intersect the vertical center line. Mark this point as S.

b) Draw the cap supports and establish the bolt holes as shown.

c) With point N as center and radius N-P, draw an arc upward to intersect line N-S. Mark the intersection as point T. Show the difference in length between lines N-P and lines N-S as distance E. Designate the cap support bolt hole radii as distance F and distance G.

Weather Cap Pattern, Fig. 5 —

a) Locate a center point. Mark it as point O. Set a compass at radius H (Fig. 4) and with point O (Fig. 5) as center draw a circle. Establish a work line from center point O to the circumference line and label the intersection point with the circumference as point U.

b) Set a compass at length E (Fig. 4) and working from point U (Fig. 5) step off six and one quarter spaces to the left on the circumference line and mark the point as V. Draw the line V-O.

c) With distances F and G (Fig. 4) as radii and point O (Fig. 5) as center, draw arcs to intersect lines O-U and O-V. Divide the arc V-U into eight equal spaces and number the points as 1 to 7 inclusive. Through points 1, 3, 5 and 7 draw lines to the point O. Mark the bolt holes at the intersection of the straight lines and distances F and U arc lines.

Collar Pattern, Fig. 6 —

a) To calculate the collar circumference, multiply the given $3\frac{3}{4}$ in. diameter by the constant 3.14 which equals $23\frac{3}{8}$ inches.

b) Draw a rectangle $23\frac{3}{8}$ by $\frac{1}{4}$ in. Divide the circumference into eight equal spaces and number the points 1 to 9 inclusive. Through points 2, 4, 6 and 8, draw vertical lines and lay out the bolt holes for the cap support.

Add allowances for seams and joints, and mark the patterns for fabrication.



STAINLESS STEEL mullions, when joined, will rise up the side of a new 22 story curtain wall building. Green tinted glass panels, separated by horizontal strips of stainless steel, will be installed between the fin shaped stainless steel mullions

Special Dies Add To Press Brake Performance

A specially designed tool steel die enabled this firm to convert a press brake into a semi-production tool and form more than 3800 fin-shaped stainless steel mullions for one of Pittsburgh's newest skyscrapers

AN ACCEPTED TECHNIQUE that converts a press brake into a semi-production tool is now being used by the Limbach Co., Pittsburgh, to press brake fin-shaped mullions for one of Pittsburgh's newest skyscrapers.

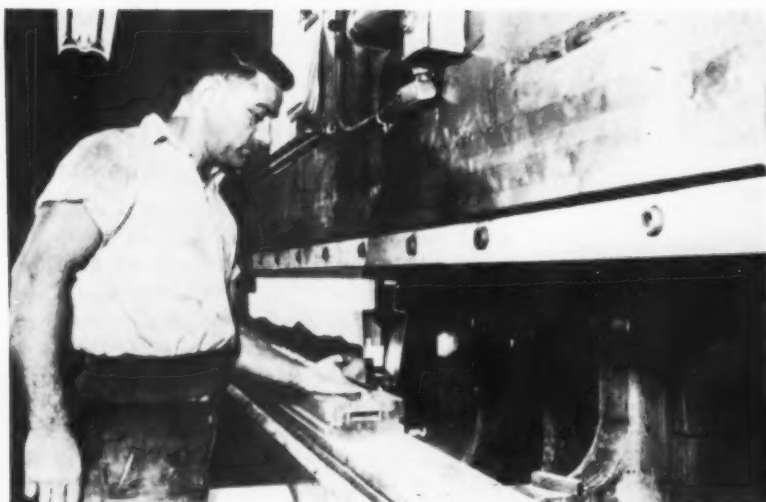
A tool steel die designed by Limbach employees simultaneously puts two practically 90 deg bends into 11 ft 8 in. lengths of 16 ga type 302 stainless steel. In all, more than 3800 pieces will be formed for the new building. The Limbach Co. is responsible for the fabrication and erection of the curtain wall panels.

The stainless and glass curtain wall building is the



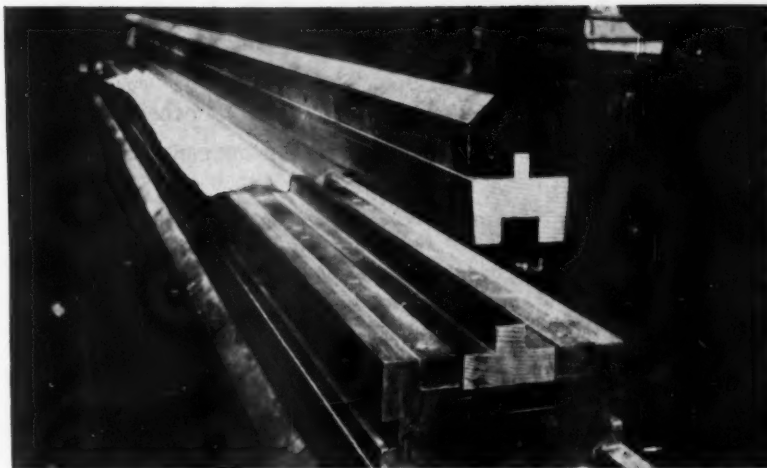
◀ EIGHT BENDS have been put into the flat sheet up to the point when the final double bend is pressed. The die is papered before each piece is loaded

PROTECTIVE PAPER was stripped from the stainless steel prior to loading it on the brake. Additional paper, wax side down, protects the die during the final forming operation ▶



◀ FINISHED MULLION is slid off the upper jaw of the brake after a single operation put two bends in the stainless sheet and formed the fin-shaped mullion. A 13 ft brake was used to form the 11 ft 8 in. section

CLOSEUP of the die used to bend the fin-shaped mullions shows the male and female sections ready to receive a sheet of stainless steel. This method of production proved economical in the long-run job for 3800 separate pieces



CONVENTIONAL PRESS braking techniques are used to form the 11 ft 8 in. fin-shaped mullions of type 302 stainless steel

fourth structure in the Gateway Center office building complex located in Pittsburgh's Golden Triangle.

Fabricating Technique

A fabricating technique was developed to meet the design of Harrison and Abramovitz, architects.

In describing the process, Kermit Griest, Limbach's Metals Department manager, points out that conventional protective paper covers the stainless sheets during punching, shearing and the first braking operations. This is then stripped away from the double bend area before final die pressing. Lubrication is achieved during the final pressing by powdering and covering the die itself with paper, with waxed side down.

To assure sealed joints, a 2 in. stainless sleeve is soldered into the top of each finished section. One

inch of the sleeve remains exposed, permitting two mullion sections to be fitted tightly. Solder discoloration is prevented by using a 95-5 percent solder and by thoroughly washing away flux when all the joint is completed.

Stainless Steel Sheathing

The building also features a vertical, windowless service core containing elevators and air conditioning equipment. This will rise the height of the building and be completely sheathed by stainless steel panels.

The editors acknowledge the cooperation of the committee of Stainless Steel Producers of the American Iron and Steel institute and the general contractors, George A. Fuller Co., in providing information and photographs for this article.

Ductwork Tables Establish Fabrication Costs

... when used to estimate weight and time required for complete low velocity air distribution systems

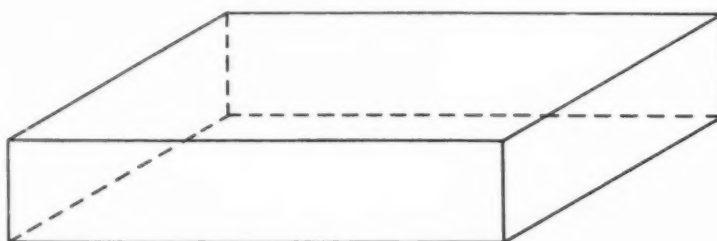
SOMEWHERE IN THE PROCESS of converting any given set of engineering plans into a finished and operating central air conditioning

system, the sheet metal contractor must face the problem of estimating the weight of galvanized sheet metal and the amount of labor

required to fabricate the ductwork ready for hanging. This fabricating cost, added to the cost of labor required for erection,

Rectangular Duct Sections

Depth 10 in.



Length of section in feet	1		2		3		4		5		6		7		8	
	Width	Weight Time	Weight Time	Weight Time	Weight Time	Weight Time	Weight Time	Weight Time	Weight Time	Weight Time	Weight Time	Weight Time	Weight Time	Weight Time	Weight Time	Weight Time
44	10.4	25	20.8	25	31.2	25	<div>Weight given in pounds</div> <div>Time shown in minutes</div>									
42	10.0	25	20.0	25	30.0	25										
40	9.6	25	19.3	25	28.9	25										
38	9.2	25	18.5	25	27.7	25										
36	8.8	25	17.7	25	26.5	25										
34	8.5	25	16.7	25	25.4	25										
32	8.2	25	15.8	25	24.3	25										
30	6.0	25	12.1	25	18.1	25	24.2	25	30.2	25	36.2	25	42.3	25	48.3	25
28	5.7	25	11.5	25	17.2	25	23.0	25	28.7	25	34.4	25	40.2	25	45.9	25
26	5.4	25	10.9	25	16.3	25	21.8	25	27.2	25	32.6	25	38.1	25	43.5	25
24	5.1	25	10.3	25	15.4	25	20.5	25	25.7	25	30.8	25	35.9	25	41.0	25
22	4.8	25	9.7	25	14.5	25	19.3	25	24.2	25	29.0	25	33.8	25	38.6	25
20	4.5	25	9.1	25	13.6	25	18.1	25	22.7	25	27.2	25	31.7	25	36.2	25
18	4.2	25	8.5	25	12.7	25	16.9	25	21.2	25	25.4	25	29.6	25	33.8	25
16	3.9	25	7.9	25	11.8	25	15.7	25	19.7	25	23.6	25	27.5	25	31.4	25
14	3.6	25	7.2	25	10.9	25	14.5	25	18.1	25	21.7	25	25.3	25	29.0	25
12	3.3	25	6.6	25	10.0	25	13.3	25	16.6	25	19.9	25	23.2	25	26.6	25
10	3.0	25	6.0	25	9.1	25	12.1	25	15.1	25	18.1	25	21.1	25	24.2	25
9	2.9	15	5.7	15	8.6	15	11.5	25	14.4	25	17.2	20	20.1	20	23.0	20
8	2.7	15	5.4	15	8.2	15	10.9	25	13.6	25	16.3	20	19.0	20	21.8	20
7	2.6	15	5.1	15	7.7	15	10.3	25	12.9	25	15.4	20	18.0	20	20.6	20
6	2.4	15	4.8	15	7.3	15	9.7	20	12.1	25	14.5	20	16.9	20	19.4	20
5	2.3	15	4.5	15	6.8	15	9.1	20	11.4	25	13.6	20	15.9	20	18.2	20
4	2.1	15	4.2	15	6.4	15	8.5	20	10.6	20	12.7	20	14.8	20	17.0	20

represents the net cost of the metal work to which must be added overhead and all other expenses, plus profit, to arrive at the selling price of the metal work connected with the installation.

The tables published on this and following pages are part of a set of ductwork estimating tables that were reviewed and revised in

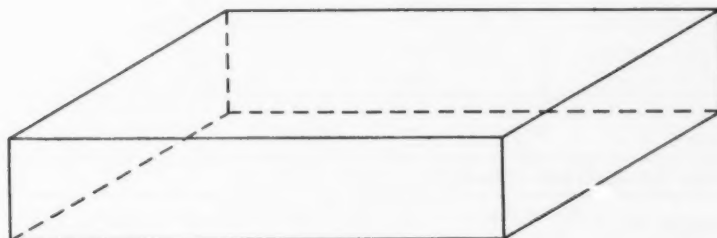
1959 to represent current practices in modern sheet metal shops. The revision was handled by Darwin A. Downing, Head Apprentice Teacher Sheet Metal Apprentice Training School, Detroit. After revision, the tables were reviewed by E. B. Root, now a consulting engineer in Birmingham, Mich. who prepared the original set of

ductwork estimating tables that were published in 1947.

Other tables in this series have been published in 1960 by American Artisan. See April, pages 69 to 73. Additional tables are scheduled for future issues. Upon completion of the series, a sample problem will be worked out in detail.

Rectangular Duct Sections

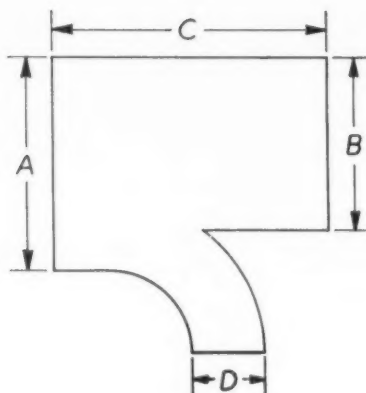
Depth 12 in.



Length of section in feet	1	2	3	4	5	6	7	8								
Width	Weight	Time	Weight	Time	Weight	Time	Weight	Time	Weight	Time	Weight	Time	Weight	Time		
44	10.4	25	20.8	25	31.2	25	Weight given in pounds Time shown in minutes									
42	10.0	25	20.0	25	30.0	25										
40	9.6	25	19.3	25	28.9	25										
38	9.2	25	18.5	25	27.7	25										
36	8.8	25	17.7	25	26.5	25										
34	8.5	25	16.7	25	25.4	25										
32	8.2	25	15.8	25	24.3	25										
30	6.0	25	12.1	25	18.1	25	24.2	25	30.2	25	36.2	25	42.3	25	48.3	25
28	5.7	25	11.5	25	17.2	25	23.0	25	28.7	25	34.4	25	40.2	25	45.9	25
26	5.4	25	10.9	25	16.3	25	21.8	25	27.2	25	32.6	25	38.1	25	43.5	25
24	5.1	25	10.3	25	15.4	25	20.5	25	25.7	25	30.8	25	35.9	25	41.0	25
22	4.8	25	9.7	25	14.5	25	19.3	25	24.2	25	29.0	25	33.8	25	38.6	25
20	4.5	25	9.1	25	13.6	25	18.1	25	22.7	25	27.2	25	31.7	25	36.2	25
18	4.2	25	8.5	25	12.7	25	16.9	25	21.2	25	25.4	25	29.6	25	33.8	25
16	3.9	25	7.9	25	11.8	25	15.7	25	19.7	25	23.6	25	27.5	25	31.4	25
14	3.6	25	7.2	25	10.9	25	14.5	25	18.1	25	21.7	25	25.3	25	29.0	25
12	3.3	25	6.6	25	10.0	25	13.3	25	16.6	25	19.9	25	23.2	25	26.6	25
10	3.0	25	6.0	25	9.1	25	12.1	25	15.1	25	18.1	25	21.1	25	24.2	25
9	2.9	15	5.7	15	8.6	15	11.5	25	14.4	25	17.2	20	20.1	20	23.0	20
8	2.7	15	5.4	15	8.2	15	10.9	25	13.6	25	16.3	20	19.0	20	21.8	20
7	2.6	15	5.1	15	7.7	15	10.3	25	12.9	25	15.4	20	18.0	20	20.6	20
6	2.4	15	4.8	15	7.3	15	9.7	20	12.1	25	14.5	20	16.9	20	19.4	20
5	2.3	15	4.5	15	6.8	15	9.1	20	11.4	25	13.6	20	15.9	20	18.2	20
4	2.1	15	4.2	15	6.4	15	8.5	20	10.6	20	12.7	20	14.8	20	17.0	20

Reducing Joint With One Branch

Depth of Duct 7 in.



Length of joint C		27 in.		24 in.		21 in.		18 in.		17 in.	
Branch duct D		16 x 7 in.		14 x 7 in.		12 x 7 in.		10 x 7 in.		See reference*	
Dimension B		12 in. less than A		10 in. less than A		8 in. less than A		7 in. less than A		See reference*	
Dimension A	Weight	Time	Weight	Time	Weight	Time	Weight	Time	Weight	Time	
44	28.1	80	24.4	80	21.8	80	19.6	80	18.5	80	
42	27.2	80	23.6	80	21.1	80	19.0	80	17.9	80	
40	26.3	80	22.8	80	20.4	80	18.4	80	17.3	80	
38	25.4	80	22.0	80	19.7	80	17.8	80	16.8	80	
36	24.5	65	21.2	65	19.0	65	17.1	65	16.2	65	
34	23.6	65	20.8	65	18.3	65	16.5	65	15.6	65	
32	22.7	65	20.0	65	17.6	65	15.9	65	15.0	65	
30	16.9	50	14.6	50	13.2	65	11.9	50	11.2	50	
28	16.2	50	13.9	50	12.6	65	11.4	50	10.7	50	
26	15.5	50	13.2	50	12.1	65	11.0	50	10.3	50	
24	14.8	40	12.6	40	11.6	40	10.5	40	9.8	40	
22	14.1	40	11.9	40	11.0	40	10.0	40	9.4	40	
20	13.4	35	11.2	35	10.5	35	9.6	40	8.9	40	
18	12.8	35	10.5	35	9.9	35	9.2	35	8.5	35	
16			9.8	35	9.4	35	8.7	35	8.1	35	
14					8.8	35	8.3	35	7.7	35	
12							7.8	35	7.2	35	
10									6.4	30	
9									5.9	30	
8									5.4	25	
7									5.0	25	
6									4.7	25	

Weight given in pounds

Time shown in minutes

*Branch duct D size 9 x 7 in. — A less B will be 6 in.

*Branch duct D size 8 x 7 in. — A less B will be 5 in.

*Branch duct D size 7 x 7 in. — A less B will be 4 in.

*Branch duct D size 6 x 7 in. — A less B will be 4 in.

*Branch duct D size 5 x 7 in. — A less B will be 3 in.

*Branch duct D size 4 x 7 in. — A less B will be 2 in.

How Foreign Steel Manufacturers Affect Steel Mill Products Market

One answer to foreign competition is harder selling, says steel executive

FOREIGN COMPETITION with the iron and steel industry of the United States was more intense last year than ever before, according to the American Iron and Steel Institute. For the first time since 1903, imports of steel mill products exceeded exports. The record flood of foreign steel imports entered the U. S. through every major customs district.

Imports of Foreign Steel

Total imports of steel mill products were 4,391,791 net tons in 1959, compared with 1,704,884 in 1958. Steel pipe and tubing imports last year were 553,135 net tons, and in 1958 they totalled 200,046 net tons. As some types of pipe are reported as structural material, it is believed, these figures do not represent all of the steel pipe that came into the country from foreign sources.

Figures for steel sheets are combined with strip, and cover hot and cold rolled materials. Last year, 332,933 net tons of hot and cold rolled sheet and strip were imported, compared with 26,969 tons in '58 — more than a twelve-fold increase.

Reasons for Increase

The steel strike of course helped to raise the import total last year, although there is believed to be no official estimate of how much the strike affected the figures. However, the strike is not the explanation for the greatly increased tonnages the U.S. imported.

Wages for foreign steelworkers,

ranging from 66 to 86 percent below those of their American counterparts, are cited particularly by the AISI as important in the import situation.

Foreign steel will continue to be a factor in this country, it seems obvious, and Robert M. Buddington, sales vice president of Inland Steel Co., gave the reasons in a talk at the second Canadian-American trade and industry conference. They are, he said:

"(1) Foreign producers have demonstrated their ability to undersell American steel by as much as 15 to 20 percent.

"(2) Some foreign producers will export if necessary at any price because the political atmosphere in which they operate makes for a high degree of inflexibility with respect to their labor costs.

"(3) They continue to expand their steel capacity with modern facilities — it is forecast that Western Europe's capacity will grow 28 percent between 1959 and 1965. As the AISI pointed out, about 50 countries have steel industries today, compared with about 25 countries in 1934.

"(4) Their quality of steel has improved.

"(5) They are adopting more aggressive marketing tactics. American subsidiaries are being established and foreign steel depots and warehouses are being provided.

"(6) Probably as a summary of the future — they must export to live and to grow and they are skilled and determined to do both. Belgium, for example, has been the chief source of foreign steel

into this country. Exports normally account for two-thirds of this country's entire steel production.

"I am therefore forced to conclude," he said, "that foreign steel competition will be a permanent factor in our steel using markets."

What Industry Can Do

The American steel industry should continue to accelerate research and development towards improved and specialized steels and more efficient facilities, Mr. Buddington said, and obviously must keep costs and selling price as low as possible, "for while price is usually not the only reason for buying, in a free society it is still an important one."

And the steel industry can sell harder, he said. Better service, closer communications, personalized selling, more accurate specifications, better technical assistance — these are things that can be improved at home and maybe even sold abroad, he stated.

Competitive Battle

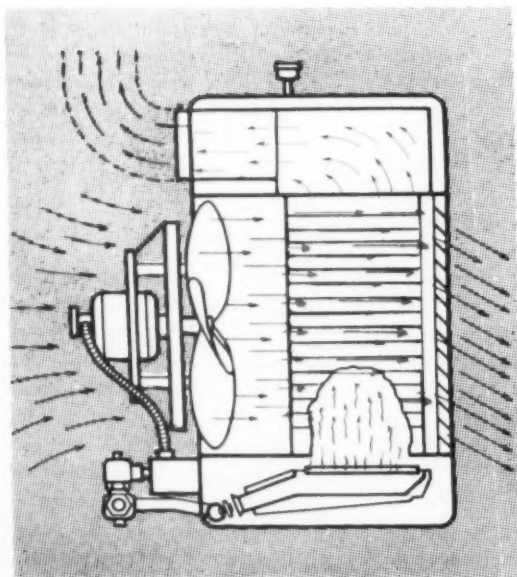
In many ways the problem of foreign competition is really the problem of effective competition in general, he concluded. "To the degree that we constantly strive to serve the needs of our customers and provide a quality product at the lowest possible price, we will most effectively meet competition from outside as well as within. It can be the type of fair, aggressive competitive battle that we in this country always claimed we were good at and enjoyed."



Heat Loss Estimate Provides Basis For Sizing Unit Heaters

Failure to recognize many factors that affect heat loss or heat gain often result in oversizing direct-fired unit heater equipment at the expense of the purchaser, and at the expense of good heating

By L. W. Sutherland
Manager, Product Planning & Engineering
Janitrol Heating & Air Conditioning Div.
Midland-Ross Corp.



DIRECT-FIRED unit heater generates heat within minutes after the thermostat calls for heat, so there need be no allowances for transmission heat losses

VARIOUS TYPES of direct-fired unit heaters, and how they can be used to serve the heating requirements of industrial plants were discussed last month; so now we will point out what items of heat gain or heat loss are characteristic of certain installations and must be considered to prepare accurate estimates that will provide the basis for selecting the required heating equipment.

Among possible heat gain sources are the following:

- 1) Total electric current for lights, particularly in windowless structures. Each kilowatt hour of electricity in lighting provides 3413 Btuh. On a recent installation with a 10 million Btuh heat loss, the electric input in the lights was approximately one million Btuh which could be deducted from heater input capacity requirements.
- 2) Consistent electric input to many electric motors add up to an appreciable number of Btuh which may be deducted from heater output capacity requirements. A satisfactory estimating value is 1000 watts (1.0 kilowatt-hour) for each installed motor horsepower.
- 3) Where heat treating operations are being conducted, some portion of the radiated heat is recoverable because it contributes to heating. Therefore, it can be deducted from the heating equipment capacity requirement. If heat treated materials cool down in an enclosed area, that heat should be considered because it may also have an influence on the unit heater capacity required. These deductions

should be based on minimum use, not on usual or maximum use.

4) Heat given off by workers, which varies from about 600 to 1500 Btuh per person (based on whether the work is light or heavy) should not be overlooked as a continued source of heat. In areas where worker density is high, this can be a sizable factor.

To omit careful analysis of probable heat gains is to fail in the responsibility to the customer to size equipment for minimum installation cost, and maximum operating satisfaction. Reference is made to possible reduction in unit capacities rather than reducing the number of units.

Within reasonable bounds, it is better to retain the original number of units to maintain good temperature distribution but reduce the size when continued and reliable sources of vagrant heat are present.

Heating equipment must have capacity for sudden heat loads that are caused, for example, when buses, automobiles and airplanes at low temperature are suddenly moved in to occupy a large portion of space. It takes about 14,000 Btuh to raise the temperature of a ton of steel from 0 F to 60 F, and approximately 24,000 Btuh per ton of aluminum for the same temperature rise.

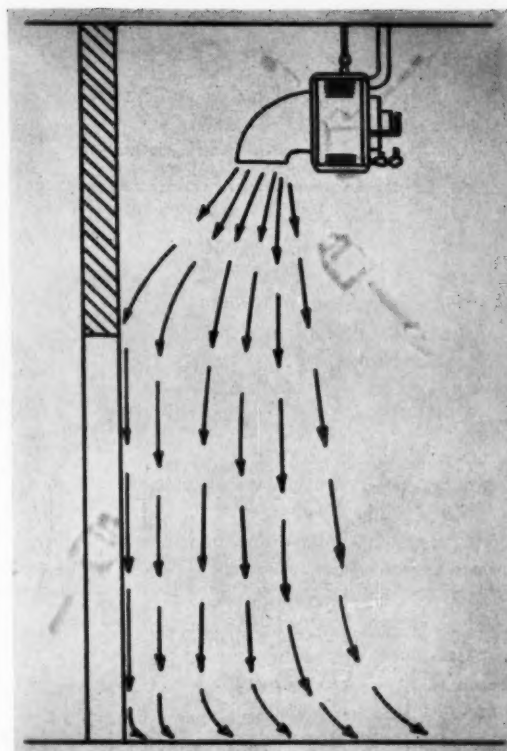
If the building must receive large tonnages of cold steel or other materials, the load that must be handled cannot be neglected.

Usually, it is not necessary to have unit capacity which would do more than bring the space and materials in it to design temperature within several hours. Therefore, it will not be necessary to have capacity for more rapid pick-up.

Mentioning cold steel focuses attention on the use of direct-fired unit heaters in steel storage areas where condensation of room humidity on the steel, even in mild weather, may cause it to rust. The addition of only a small amount of heat to raise the temperature and reduce relative humidity, plus the air circulation from heaters has proved very effective.

Heat loss calculations include the elements of loss through cold walls, through glass which includes doors, ceiling, roofs, floors, infiltration and excessive air leakage. If infiltration is computed by the crackage method, we will have a fair evaluation of the loss through hourly air change. On the other hand, if infiltration is taken as an arbitrary air change which may be done in order to simplify the calculations, it is often found that the number of Btuh for this item will be considerably greater than the calculated loss through door and window surfaces. Experience has proved that this is particularly true in buildings in which there is a very minimum of outside windows or doors.

The amount of infiltration is a function of doors and windows since it largely occurs at cracks around these openings. Failure to recognize this point, and



BLOWER UNITS with high velocity nozzles are used to direct the heated air downward to mushroom out along the floor

neglecting to reduce the infiltration loss to its realistic value results in oversizing of equipment at the expense of the purchaser and also at the expense of good heating.

With oversized equipment, the operation is less continuous and there is more opportunity for air stratification that leads to discomfort.

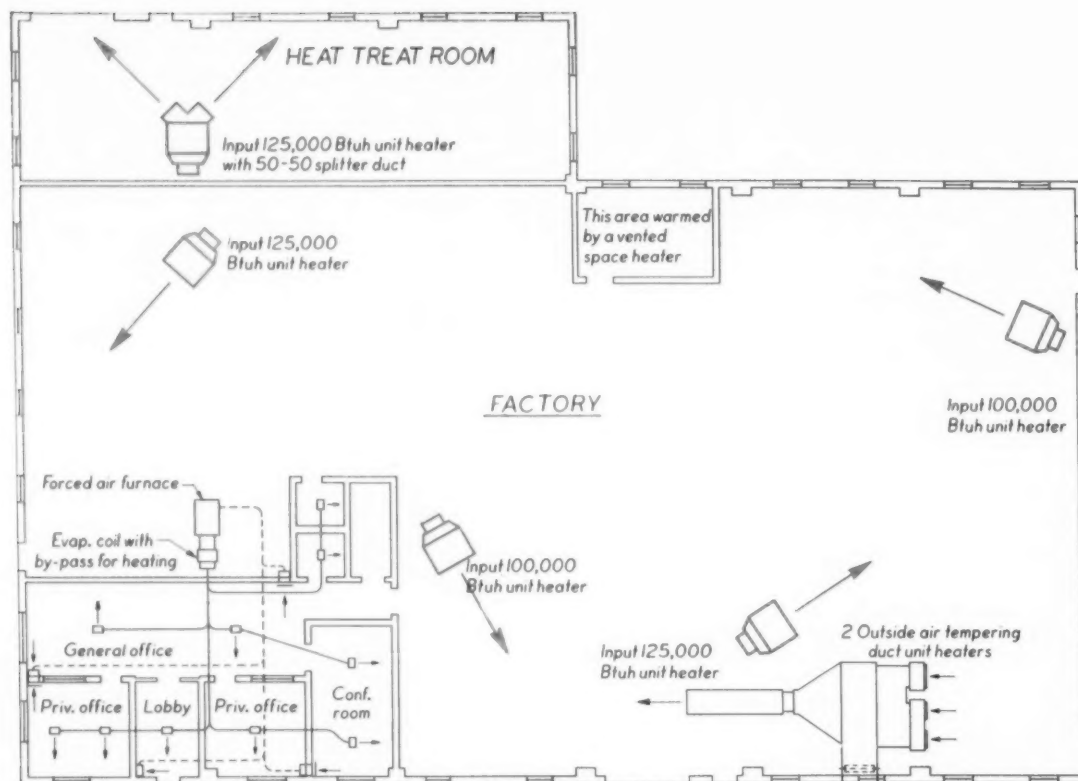
Infiltration losses may be calculated as discussed

Keep in Mind

Before finally sizing the equipment, this principle must be recognized . . .

The closer the heat output of the equipment offsets the heat loss under design conditions:

- The greater will be operating economy
- The more continuous will be equipment operation under maximum load
- The more even will be the temperature distribution and comfort level



WITHIN REASONABLE BOUNDS, it is better to retain the original number of direct-fired heater units to maintain good temperature distribution but reduce the size when continued and reliable sources of heat are obtainable

except in situations where power exhaust fans are used to provide positive ventilation air changes. In this case, the exhausted volume of air must be ascertained. It is not used in the estimate unless the calculated heat of exhausted air exceeds the amount of heat calculated for normal infiltration loss. When the heat content of the exhausted air exceeds the quantity calculated as the infiltration loss, then the estimated heat content of the exhausted air is substituted in the estimate for the infiltration loss figure.

Operating Schedules Are Important

Operating schedules of mechanical exhaust systems are important. The heating load will be less if the system is turned off during non-working hours. This will be shown as a difference in fuel consumption.

Discomfort due to air stratification can be caused by the oversizing of equipment. Occasionally requests are received for the sizing of unit heaters on the basis of the number of air recirculations per hour.

For example, it may be specified that the combined air delivery of the units must be adequate to recirculate the volume of the space, four, five or six times per hour.

Experience has proved that it is more advisable to

select equipment on the basis of the amount of heat output required rather than by air delivery.

Assume, for example, that the cataloged total air volume from 10 unit heaters will theoretically circulate the volume of the air in the space three times an hour. The combined heat output of the units is adequate to handle the heat loss.

Now let's assume that the units are sized on the basis of an air delivery to provide six changes per hour. Obviously, this would double the amount of units and heat input. If the 10 units would operate almost continuously in cold weather, doubling the number of units would result in 20 units operating only 50 percent of the time.

Simple arithmetic will show that over a period of time the total air circulated would be the same with the 20 units as with the 10. But with the 10 units operating practically constantly under design conditions, air circulation would be continuous to provide maximum comfort and best operating economy.

Since the direct-fired unit heater generates heat within minutes after the thermostat calls for it, there need be no allowances for piping transmission heat losses.

The amount of allowance for pickup from a lower temperature which may be maintained during unoc-

cupied periods, such as at night or over weekends, to daily operating temperature depends largely on the amount of temperature reduction during the low temperature hours.

Principle to Remember

Before finally sizing the equipment, one principle must be recognized. The closer the heat output of the equipment offsets the heat loss under design condition, the greater will be operating economy, the more continuous will be equipment operation under maximum load, and the more even will be the temperature distribution and comfort level. This desirable condition will exist for a greater portion of the heating season if the units are closely sized.

A customer is given better service in terms of greater comfort and lower original investment if a job is sized extremely close. If the purchaser or designing engineer has a thorough understanding of why the minimum amount of equipment will do a more satisfactory job, the customer will benefit.

If it should develop that some additional equipment is required, extra direct-fired unit heaters can be added at a later date and at minimum expense without disrupting any of the existing system.

Experience so far shows that selecting equipment to closely match the load rarely makes it necessary to put in additional equipment capacity at a later date.

When to Omit Arbitrary Increase

Another practice followed by successful applicators of direct-fired unit heaters is omitting the arbitrary increase in heat losses for assumed higher room temperatures above the working area in high rooms. The exception is in such cases as airplane hangars or buildings in which leaky construction, or where ventilators located in the peak of a building have a tendency to create a draft that draws warm air from below into the higher area.

The best testimonial for the practicality of the above practices is the fact that our engineering layout department has been keeping records and following these principles for many years, and the absence of complaints as to the adequacy of the systems bears mute testimony in favor of the procedures just outlined.

Why experienced heater installers consider the "effective heating area" of a unit rather than "length of throw" as being more realistic, and a better guide will be discussed in next month's *American Artisan*. Also, you'll read about factors that have to be considered when positioning units, and how various air distribution accessories help overcome structural and industrial equipment handicaps.

Series Index

The subjects treated in this series on direct-fired heating equipment in industrial plants are:

Application A breakdown of the various types of direct-fired unit heaters that are available and how they are equipped to meet practically any industrial plant heating requirement

Selection Points out what items to consider when calculating the heat loss or heat gain so the job can be sized extremely close in order to give the customer better service in terms of greater comfort and lower original investment

Installation Shows why experienced unit heater installers consider the "effective heating area" of a unit rather than "length of throw" as more realistic and a better guide when locating heat distribution equipment that has the proper air distribution accessories

Environment, Life Expectancy, & Fuel Data Several steps are given on how to reduce corrosive action and thereby prolong the life of the unit, and explains ways direct-fired unit heater equipment can be applied to meet the requirements of a dual fuel supply with good results

Economics & Sales Features Explains the merits of an LPG-air system as compared to the straight direct fuel system in terms of job size, physical arrangement of the heating equipment, amount of piping required, and provides guides to estimate fuel consumption



Silver Shield Program Gets New Sales Tools

NWAHACA introduces a five-hour sales training program to enable Indoor Comfort Bureaus to sell more quality systems

REPRESENTATIVES from 14 Indoor Comfort Bureaus gathered for the second Silver Shield dealers' meeting in Cleveland to relate progress in establishing workable programs for promotion of better heating and air conditioning systems. Total attendance was 58, including 40 dealer-contractors, nine members of the National Warm Air Heating and Air Conditioning Association's marketing committee and nine members of NWAHACA's staff.

New Selling Tools

Several new sales tools to help sell Silver Shield systems were introduced by the association's staff. One of these was a guarantee certificate. The $8\frac{1}{2} \times 11$ in. certificate resembles an official document issued by municipalities to qualified professional people. The certificate, which will be mounted adjacent to the furnace is signed by both the installing dealer-contractor and inspecting officers of the local Indoor Comfort Bureau.

This guarantee states in clear-cut language the design conditions which the system is required to produce as well as a general description of the building.

The description of the building is included in this guarantee because in some cases it's been found that systems designed to adequately serve a certain building have been taxed beyond their capacity when additional rooms have been

added to the building.

There are two of these guarantees, one to be used with old house modernizations and the second will apply to new house work.

Sales Training Program

A second sales tool introduced by the association was a five-hour sales training program available to members of local Indoor Comfort Bureaus. This five-hour program is designed in such a manner that it will be conducted on two consecutive evenings by a member of the national association's staff. Members of the Indoor Comfort Bureau will be shown how to emphasize Silver Shield quality to prospects.

How to Create Desire

The sales program includes eight orderly steps that provide the basis for the engineering skill required to design and install a Silver Shield system. Thus, the sales training program will create in a prospect's mind a desire for a system that can meet the requirements spelled out in the Silver Shield guarantee.

The eight orderly steps to be

Steps used in a planned sales presentation to stimulate prospect interest:

- Show how your system is based on skill of a well-trained staff.
- Build confidence by showing value.
- Show how you solve heating problems.
- Point out definition of—and need for comfort.
- Fully explain guarantee.
- List what goes into the Silver Shield system.
- Name products that will be used.
- Use satisfied customer testimonials.

INFORMAL DISCUSSIONS between representatives of Indoor Comfort Bureaus provided an opportunity to get first hand reports on actual experiences in promoting the Silver Shield program at the local level



heating systems are based on the use of a well-trained staff of engineers, installation and servicemen.

2) Build confidence in a prospect by showing the value of field and laboratory research programs conducted at the University of Illinois and in the field by a mobile laboratory sponsored by the national association.

3) Show how this information is used to solve heating problems brought about through various floor plans, weather exposure, construction details and family needs.

4) Point out the need for comfort that can be assured only through a Silver Shield system. This comfort can only be achieved by avoiding cold floors and drafts; controlling humidity and odors; filtering dirt and dust from the air; and preventing overheating of some areas and underheating of others.

5) Spell out the guarantee of the

Silver Shield system to provide the comfort requirements of the prospect's house.

6) List what goes into the design of a Silver Shield system, such as: a) heat calculation and equipment selection; b) specifications reviewed by the Indoor Comfort Bureau; c) inspected upon completion by members of the Indoor Comfort Bureau; and d) awarding of the Silver Shield seal and guarantee certificate.

7) Name the products that will be used. In this step, the dealer-contractor spells out for the prospect the equipment he will use: a) central unit; b) duct system; c) diffusers; d) automatic controls; e) safety devices.

8) Step eight is the testimonial of other Silver Shield users. This step outlines the expressed opinions of other owners of Silver Shield systems as related to the comfort level provided during pre-

vious cold spells.

Other business conducted during the day-long meeting included a report from each of the 14 Indoor Comfort Bureaus attending on methods of financing, obtaining membership, committee activities, frequency of bureau meetings, physical aspects of meeting locations, standards enforcement, inspection and labeling of Silver Shield systems, the Silver Shield training program and refresher courses, and Silver Shield sales promotion programs.

Officers Elected

Officers were elected to guide the joint activities of the 14 Indoor Comfort Bureaus. Elected were Glen W. Rynbrand, Kalamazoo, president; R. W. Fogarty, Buffalo, vice president; and Joseph C. Sloane, Lansing, secretary-treasurer.

NEW SALES TOOL designed especially for selling Silver Shield systems is examined by (L-R) Bernard Lawrence, Greenville, Pa.; Frank Sherwood, Willow Grove, Pa.; Glen Rynbrand, Kalamazoo, Mich.; and R. W. Fogarty, Buffalo, N.Y.





Establish Your Company As Air Conditioning Headquarters

- *Clean Up*
- *Paint Up*
- *Dress Up*
- *Back Up*

Make your place of business stand out over your competitors with showmanship, displays that attract public attention and stimulate interest, and proper interior and exterior maintenance of your building

ONE OF THE BEST ways to locate prospects for summer air conditioning systems is to establish your company as "air conditioning headquarters." People are inclined to believe what they see, therefore one of the most effective ways you can impress prospects is to dress up the front of the company's place of business.

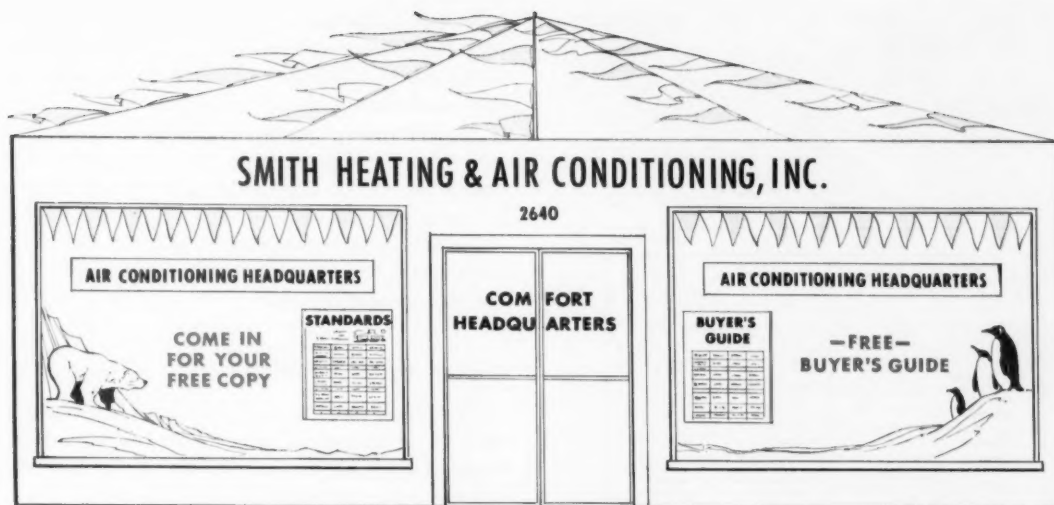
The public has shown its interest and approval of showmanship by making purchases where pennants and banners undulate in the breeze, and where large signs invite them into a showroom to see and learn about the variety of products that will contribute to their well-being.

Current merchandising methods of gasoline service stations, appliance stores, department stores, shopping centers and supermarts are built around attracting the attention of the public and influencing it to stop and view the available product or services that contribute to their well-being.

Let Showroom Sell

By applying these proven merchandising techniques to his own business, the air conditioning dealer-contractor can take advantage of the public's interest in summer comfort by creating the impression of cool, dry atmosphere inside his showroom.

This, of course, means that the showroom must be air conditioned to maintain a suitable environment for conducting a summer air conditioning sales presentation. People can hardly be expected to make a purchase from a dealer-contractor who doesn't "practice what he preaches." Nor can a salesman, who hasn't enjoyed the benefits of year 'round air conditioning truly reflect an appreciation of the benefits of summer comfort.



PUBLIC HAS SHOWN its approval of showmanship by making purchases where pennants and banners undulate in the breeze, and where large signs invite them to see and learn about products that will contribute to their well-being

To become known as "air conditioning headquarters," a dealer-contractor doesn't necessarily require a large, expensive showroom or display room. But he does need to make the most out of available facilities, and use sales promotion tools that make his place of business stand out over that of his competitors'. This is where the Standards for Rating Residential Cooling Systems card, introduced last month in *American Artisan*, can be effectively put to use as a sales promotion tool.

Create Right Impression

The ideas expressed in this article need to be adapted to the physical environments of the individual building.

The first step is to clean up the front of the building, remove weather stains from existing decorations, signs and other store front accessories.

Second, paint the exposed woodwork in attractive color combinations because the most effective use of a display window or store front is to make a pleasing impression upon passersby.

Color Helps Sell Coolness

A popular combination currently in use is a deep rose combined with aquamarine, with silver lettering placed over the aquamarine. This combination has proven to be clean appearing and harmonizes well with white, which is predominantly the most effective decorative color representing coolness.

The third step in preparing the display window to establish the company as air conditioning headquarters is to dress the window with inexpensive decorations that can be easily removed. These decorations

can be effectively used during the summer air conditioning sales season, and then removed to make room for similar decorations that promote warm air heating when the summer air conditioning selling season is over.

The final step in readying the building for the summer air conditioning selling season is to back up the display windows with an attractively arranged showroom.

How Maintenance Affects Sales

The cost of preparing a display window and showroom to attract the public's interest during the period they are most interested in buying summer air conditioning, or the other selling seasons, can be accomplished with a minimum of cost if the exterior of the building is properly maintained.

A tidy, well-kept appearance is considered essential to uphold a company's reputation. The public has indicated it expects this from those who operate a modern business organization. Neglect in the maintenance of a company's place of business usually results in loss of confidence by those who do business with the firm because it is often a human trait to associate appearances with capabilities and skill.

Neglect Is Costly

The cost of neglect goes beyond a loss in sales volume due to either the number of customers or the class of prospect who is in the market where price is the only criterion he will listen to. Neglect also results in much higher maintenance costs which must ultimately be performed to keep a building weather-tight.

STANDARDS for RATING RESIDENTIAL COOLING SYSTEMS.



Maximum comfort can be expected from central residential summer air conditioning systems designed to meet the conditions set forth under the GDOR classification.

	GDOR	FAIR	POOR
ROOM TEMPERATURES	Between 75 & 78 F	Between 73.1 & 75 F	Over 80 F
AIR TEMPERATURES BETWEEN 3 and 60 in. LEVEL	Less than 4 degrees	Between 4 & 7 degrees	Over 7 degrees
TEMPERATURE VARIATIONS BETWEEN ROOMS	Less than 2 degrees between coolest and warmest rooms	Between 2 & 4 degrees from coolest to warmest rooms	Over 4 degrees between coolest and warmest rooms
HUMIDITY	*Stable	Moderate variation	Large variation
DRAFTS	No noticeable drafts in any occupied area	Discomfort from drafts at specific spots in an occupied area	Discomfort throughout occupied area
VENTILATION	No stale odor in house	Stale odor in house	Objectionable odors in house
NOISE	Equipment is quiet	Equipment noise is noticeable	Equipment noise is objectionable
BLOWER OPERATION	Constant	Cycles with compressor	
APPLIANCE VENTING	All appliances vented	Partial venting only	No appliances vented

These standards are copyrighted by American Standard & Northrup Company. Changing, 5. 1959 and they will be reprinted in part or in full without permission.

DISPLAY STANDARDS CARD to pre-sell prospects on your ability to design a system that will provide them with maximum comfort.

Keeping in mind that the recommendations included in this article must be adapted to facilities available to dealer-contractors, the following is a proposal that is sufficiently flexible to adapt itself to most any type of show window exposed to a fair amount of pedestrian or automotive traffic.

For this example, we'll utilize the type of building illustrated at the beginning of this article. The building has one medium size display window located on each side of a double door entrance. The showroom behind the display window doesn't have to be very long. There is an office wall just 21½ ft behind the display window on the right side. The space between the window and the office wall can be used for displaying components of an air conditioning system.

Signs Sell Components

Such components could include a flexible connection for installation in supply and return ducts with a notation that this equipment is used to prevent noise transmission from the mechanical equipment to the duct system.

Another small component displayed could be the type of vibration absorbing base equipment used to prevent noise transmission to the structural members of the building. A small sign could read: "Used on every job to achieve quiet operation."

A third component could be several types of dual purpose diffusers and registers, with the sales message slanted toward the versatility of the diffuser to serve both heating and cooling requirements.

Another piece of equipment on display could be a clock type thermostat with a caption suitably pointed toward the ability to provide around-the-clock temperatures every day of the year.

The wall opposite the display window could contain paper and cardboard merchandising aids made available by manufacturers.

Display Invites Inspection

Let's assume this is a way that one display window could be attractively decorated, and that the other display window on the opposite side of the building is in front of a small showroom.

It could follow a pattern in which actual equipment used for air conditioning could be used as a backdrop for the second display window. By actually showing some of the equipment you are inviting the public in to see the products so they can learn how it could be used to provide year 'round comfort.

Movement Attracts Attention

In the sample illustration that's offered as a guide to make both the display windows and the front of the building attractive, it should be noted that the top of the building includes pennants free to wave in the breeze. This moving type of sales promotion tool is used to attract the attention of passersby.

Once the eye has been attracted to the moving pennants and banners, the company name appears immediately below the point to which the eye has been drawn. This establishes the fact that this is Smith Heating and Air Conditioning Co., and that they are offering their services for the public's comfort.

Show Summer Comfort

One display window could be painted with a scene that is connected with cool temperatures. A printed and trimmed paper scene could serve just as well. Such a scene could show a polar bear gazing out across a stretch of snow covered landscape. The polar bear could be looking toward an enlarged set of the Standards for Rating Residential Cooling Systems.

This set of standards could be attractively prepared by a local sign painter who could follow the same outline used on the card published in the April American Artisan. Black lettering between the polar bear and the enlarged standards card should invite the passerby to come in for a free copy of the standards card and for more information about residential air conditioning.

This same window would carry a banner proclaiming Smith Heating and Air Conditioning as "air conditioning headquarters." At the top of the window a row of pennants could be dangling to tie-in with the pennants suspended above the building.

The right display window would also carry the same tie-in combination of pennants across the top, and a duplicate of the air conditioning headquarters theme used in the opposite display window. This window would also carry an enlarged copy of the Standards for Rating Residential Cooling Systems card.

Tie-In Buyers Guide

Whereas the first copy of the enlarged card could use a one word bold headline of "Standards," the second enlarged card could use a two word bold headline of "Buyer's Guide."

This second copy would be placed in a position in the right hand window comparable to the location of the enlarged standards card in the left hand window.

Either under or beside the second card, the message, "Free—Buyer's Guide, Come in for a copy" in very large black letters could be used. This lettering could be overlapped onto a south pole scene showing some penguins looking out to sea from a snow capped landscape.

With these two windows being separated by a twin door entrance, it would be well to place across the two doors, slightly above eye level the word "Comfort" centered between the two doors, and then, below this, "Headquarters." This carries out the theme of comfort headquarters and establishes again that the



SIGNS SHOULD EDUCATE prospect on the types of equipment and components that are used by your firm to give trouble-free comfort

company offers year 'round comfort as well as air conditioning. Under this wording, and at about the 5 ft level could be attached actual samples of the Standards for Rating Cooling Systems card so prospects entering the showroom can visualize the size card that they will receive.

Promotion Prepares Prospect

Sales promotion of this type has already prepared the prospect for acceptance of the many points that can be brought out by the salesman as he describes the various types of equipment and the way they will be used by his company to design a system that would be guaranteed to provide them with maximum comfort at all times.

STANDARDS for Rating Residential Heating and Cooling Systems cards can be used for presentation by salesmen, as give-away items for home shows, as direct mail pieces, etc. Designed to assist homeowners in their purchase of a quality summer air conditioning system, the two-color check-lists are available at the following prices:

Quantity	Cost
50	\$ 1.25
100	2.35
200	4.50
300	6.60
400	8.80
500	11.00
1000	21.00
2000	42.00
3000	63.00
4000	84.00
5000	105.00

To: The Editors
American Artisan
6 N. Michigan Ave.
Chicago 2, Ill.

Please rush the following quantities:

_____ **Standards for Rating Cooling Systems cards**

_____ **Standards for Rating Heating System cards**

Enclosed is my check for \$. . . to cover reprinting costs.

(Please print)

Name _____

Company _____

Street Address _____

City and State _____

I am a dealer _____ **wholesaler** _____ **manufacturer** _____
other _____

Use Cooling Standards As Outline in Designing Room Temperature Systems

By S. W. Reid

Air Conditioning Engineer

Gilbert Associates, Inc.



Research data has caught up with early promoters of summer air conditioning who used the "degrees cooler inside" theme to emphasize the effectiveness of summer comfort

THE SUBJECT OF INDOOR CLIMATE would have had no more meaning during the days our great grandfathers or even grandfathers were in their prime, than would other currently familiar topics such as television or jet air transportation. In those early days the best one could hope for in the winter was an opportunity to expose himself occasionally to a source of heat. This meant going where the heat was and sitting around the kitchen stove, the parlor heater or the fireplace. The idea of distributing heat indoors wherever people might go instead of compelling people to go to the heat was a long time in coming.

Rapid progress in indoor climate control began with the early attempts at central heat, but even these were far from measuring up to our present day conception of indoor climate. Not until the factors of automatic firing, cleanliness, unified room temperatures, automatic temperature control and other refinements came on the scene did we begin to appreciate the advance that had been made in residential heating.

Until we were able to control all of the factors that

make our indoor heating climate, there was not any need for finding out what combination produced the most comfort.

A man who heated his house with a fireplace, for instance, would have no incentive to study the effect of cold down drafts from windows. Nor would the man who heated his house with a single coal-fired space heater in the living room have been particularly interested in knowing that a good heating system should keep all rooms in the house at the same comfortable temperature.

Principles and Progress

Not until engineering research was able to define the principles of design and manufacturers able to provide the products whereby principles could be put into being, did we begin to realize how crude our early concepts of indoor winter climate had been.

Today, the homeowner has been so well sold on the idea of a clean, automatically fired and controlled heating system that can keep him and his family in

shirt sleeve comfort in any room of his house throughout the winter that no builder in any but the most temperate parts of our country, would dare put up a house without this feature.

The story of indoor summer climate has many similarities to the heating story. Not so many years ago the only possible relief from summer heat and humidity was to travel to cooler areas — the seashore and mountain resorts. In a way, this compares with the old need for going to the kitchen or gathering around the fireplace to keep warm.

First Attempts Toward Summer Comfort

With the spread of electric service to homes, the electric fan came into its own as a device for summer relief. We were perfectly satisfied with it in its day not only in homes but in offices and commercial establishments as well. No doubt there were many who tried putting a cake of ice in front of the fan. Inevitably, it was realized that the same machinery which could produce the ice for cooling the air, could cool the air directly. With this realization, true air conditioning was born. There was still a long way to go.

Who knew then what temperature one should design to? Who knew anything about relative humidity and its effect upon comfort? Who knew anything about acceptable limits of air motion in a home? Not only did we have a lot of "finding out" to do about the kind of climate that would suit us best, we also had a lot to learn about how to produce it with equipment of reasonable cost and safety.

Wage "Battle of Degrees"

Just as the only criteria for judging early heating systems was whether or not they could maintain a reasonable degree of warmth in the spaces they served, so the only way an early cooling system was judged was whether or not it could provide a reasonable temperature reduction in the spaces it served. Without any idea or standard of how much temperature reduction was reasonable, some restaurant and theater owners engaged in a "battle of degrees" trying to outdo one another in the "cool comfort" which they offered the public.

Research Reveals Benefits

Research data gradually caught up with the early promoters of air conditioning, and the public began to get the true story of all the benefits this new endeavor had to offer. By using sound scientific principles, engineers were able to design systems to meet desired standards. Paralleling this came improvements and refinements in products so today's home-

owner can afford complete indoor climate control on a year 'round basis.

As a part of the story that has been put together over the last thirty years have come various data on the reaction of the occupants of an air conditioned room to the room temperature.

Individual Preferences Vary

Air conditioning dealer-contractors know that this reaction, on the basis of individual preference, can vary considerably. However, over the years a pattern has developed.

The American Artisan Standards for Rating Residential Cooling Systems, published in April, contain the latest manifestation of this pattern. The first item on the standards card rates a room temperature from 76F to 78F as GOOD, from 78.1F to 80F as FAIR, and over 80F as POOR. These ranges correspond very closely with data reported on the comfort chart in the ASHRAE GUIDE. They have recently been confirmed by actual field test data from the Austin Air Conditioned Village Project by the National Warm Air Heating and Air Conditioning Association (NWAHACA) and the National Association of Home Builders.

Conditions That Affect Cooling Load

While one can readily understand the relative rating of room temperatures with reference to human comfort, the significance of these temperatures as related to the capability of the cooling system requires more careful analysis.

For example, a given cooling system can produce a room temperature of 76F only when the cooling load in that room is equal to or less than the capacity of the system. Since the residential cooling load, and to some extent the system capacity are influenced by prevailing outside conditions, it is necessary to relate proposed inside conditions to corresponding outside conditions.

What Is Air Conditioning?

True air conditioning provides comfort in all seasons, according to the American Society of Heating, Refrigerating, and Air-Conditioning Engineers. ASHRAE defines air conditioning as:

"Air conditioning is the process of treating air so as to control simultaneously its temperature, humidity, cleanliness and distribution to meet the requirements of the conditioned space."

"Heat gain factors take into account the effects of conduction due to outside-inside temperature difference plus solar radiation."

In order to see the significance of this relationship, we will calculate a cooling load for a single story home. Let's say its north and south walls are 40 ft, east and west walls are 30 ft, and is of frame construction. To keep the calculation simple, we assume that each wall contains 20 percent glass shaded by half drawn light colored shades. Using the method of NWAHACA, Manual 11, assume the home is in a region of medium daily temperature range.

Calculate Temperature Differences

Let us calculate the cooling load for outside-inside temperature differences of 10, 15, 20 and 25 degrees F. Before looking at the calculation which is summarized in Table 1, let us mentally estimate how the cooling load for say an outside-inside temperature difference of 20 degrees will compare with the load calculation for a 10 degree difference.

For one accustomed to thinking in terms of a heating load calculation, the answer would be twice as much. Table 1 indicates the load for a 10 degree difference is 31,120 Btuh. For a 20 degree difference it is 38,455 Btuh, an increase of less than 25 percent. The percentage increase for a design temperature difference of 20 degrees over 15 degrees is only about 11 percent and not 33 percent as might be expected from the percentage increase in design temperature difference ($5 \div 15 = 33$ percent).

Application of Cooling Standards

Standards for Rating Residential Cooling Systems, as published in April 1960 American Artisan were based upon research conducted in the laboratory at the University of Illinois and other technical institutes, on findings in the field at the Austin Air Conditioning Village project and investigations by a mobile laboratory sponsored by the National Warm Air Heating and Air Conditioning Association.

This month and in future articles, Sumner W. Reid will discuss certain points listed on the Standards card. He will outline the basis for the different classifications of each point and will show how the information can be translated into good performance through proper application.

Now take a closer look at Table 1 to see the reason why the outside-inside temperature difference does not have more of an effect upon the total load than we might anticipate. The answer lies in the heat gain factors that are used.

Effects of Solar Radiation

These factors take into account the effects of conduction due to outside-inside temperature difference and solar radiation. The latter represents a substantial part of the cooling load and can exist even when there is no outside-inside temperature difference. The solar load does not change with the outside temperature. Therefore, the size of this solar load will moderate the effect of a change in the temperature difference.

We, by no means, want to imply by our example that it represents a fixed percentage variation in load with temperature difference. The purpose of the example is to point out that the improvement in going from an inside design temperature of 80F or over to between 76F and 78F may not increase the cooling load or the cost to produce the cooling as much as one might guess.

Standards Help Select Equipment

After looking at the various total loads tabulated in Table 1, we now have the problem of selecting equipment. Assume the house is located in a part of the country for which a summer design temperature of 95F is common. When this temperature prevails, we have the choice of giving our customer a house temperature of anywhere from 85F to 70F depending upon which load is used as the basis for our system design.

To come within range of the American Artisan Cooling Standard, we can immediately eliminate a house temperature of 85F as being wholly unacceptable (anything over 80F is rated as POOR) and a house temperature of 70F as being uncomfortably cool (76F is rated as the lowest temperature necessary for a GOOD rating).

What Loads to Consider

This leaves us only two loads to consider seriously: the ones calculated for 20 and 15 degree differences (resulting in house temperatures of 75 and 80F respectively). The former will give our customer

a system rated GOOD, and the latter will give him a system rated POOR.

Notice that a difference of only 3670 Btuh (38,455 - 34,785) is required to produce a five degree reduction in house temperature (from 80 to 75F). Proportionally, only $(2/5 \times 3670)$ 1470 Btuh are required for a two degree reduction (80 to 78F) and only $(4/5 \times 3670)$ 2940 Btuh are required for a four degree reduction (80 to 76F). Our example house requires from 1470 to 2940 Btuh of cooling to make a GOOD rated system out of a POOR one.

Looking again at Table 1, we see that the total cooling loads for a 15 and 20 degree outside-inside temperature differentials are 34,785 and 38,455 Btuh respectively. For a 76F house (95F outside) the load is about 37,800 Btuh. Any of these loads call for an air conditioning unit with a capacity rating of approximately 3 tons or 36,000 Btuh. It would not justify using the next larger size which would probably have 5 tons or 60,000 Btuh capacity for this particular application.

Calculate Load on "Safe" Side

In selecting an air conditioning unit to match a given calculated load, the dealer-contractor should remember that, if he makes his calculation carefully, the load will be on the "safe" side.

In this connection it is interesting to note in the "Residential Air Conditioning Report", published by the National Association of Home Builders' Research Institute in connection with the Austin Air Conditioned Village Project, that the average heat gains

calculated in accordance with the 1954 and 1955 editions of NWAHACA Manual 11 were 24,437 and 18,815 Btuh respectively whereas the actual average heat gain determined by test was found to be only 16,400 Btuh.

A footnote in this publication points out that corrections in the 1955 Manual 11 were made, in part, to reflect the results of the Village tests. This is a good example of how research is put to practical use.

Carelessness Is Costly

Perhaps the most important words in the preceding paragraph were "if he has made his calculation carefully". Carelessness can easily make more of a difference between an actual and calculated cooling load than can the wrong choice of outside-inside temperature differential. In a broad sense, carelessness can apply not only to the load calculation but also to other factors such as failing to agree with the owner as to how his system will be operated.

The method for calculating cooling load stated in Manual 11 assumes that an automatic temperature control will be set at a constant temperature for 24 hour operation. This type of operation permits the heat retaining characteristics of the house structure to be used to full advantage to delay the influx of heat into the house. This levels off what would otherwise be severely peaked loads that the system could not handle. If the owner desires a different type of operation, such as during peak load hours only, the method outlined in Manual 11 will not provide the necessary value for equipment selection.

Table 1—Comparison of Summer Design Temperature Differences

Design temperature difference:				10°		15°		20°		25°	
Exposure	Dimensions	Area	HGF*	T _d	Btuh	T _d	Btuh	T _d	Btuh	T _d	Btuh
N. Wall — gross	40 × 8	320									
N. glass (20%)		64	.72	32	1475	37	1700	42	1930	47	2160
N. Wall — net		256	.25	9	575	14	895	19	1220	24	1535
E. Wall — gross	30 × 8	240									
E. glass (20%)		48	.72	39	1350	44	1520	49	1695	54	1870
E. Wall — net		192	.25	9	435	14	675	19	915	24	1150
S. Wall — gross	40 × 8	320									
S. glass (20%)		64	.72	31	1430	36	1660	41	1890	46	2120
S. Wall — net		256	.25	21	1345	26	1665	31	1985	36	2310
W. Wall — gross	30 × 8	240									
W. glass (20%)		48	.72	225	7770	230	7950	235	8120	240	8300
W. Wall — net		192	.25	35	1680	40	1920	45	2160	50	2400
Roof	30 × 40	1200	.10	45	5400	50	6000	55	6600	60	7200
Subtotal					21460		23985		26515		29045
Outside Air					3220		3600		3980		4350
Moisture					6440		7200		7960		8700
Total Btuh					31120		34785		38455		42095

*HGF = Heat Gain Factor



NEW HOME of Adams Heating & Cooling, Inc. before moving had been completed. Front sign has large colored lettering that stands out against the white background. Signs will also be used on the side wall and roof

Dealer-Contractor Relocates Operation To Increase Traffic, Speed Deliveries

When a change in business environment caused a decrease in walk-in trade and delays in outgoing orders, this dealer-contractor found a more desirable location by following a set of rules that outlined his requirements

THERE ARE MANY PROBLEMS involved when a dealer-contractor finds it necessary to move his place of business. Adam Pataky, Adams Heating and Cooling, Inc., Columbus, O., recently faced these problems when stores located on both sides of his place of business were vacated and rented to entirely different types of businesses. The change in business environment created acute parking problems for customers using the front entrance and for employees using the rear entrance. The result was a decrease in walk-in trade, and additional delays when loading parts

and equipment for use at the job site.

Lists Requirements

When deciding upon his need for a new location, Mr. Pataky weighed problems dealing with administrative accommodations, office facilities, shop facilities and layout, engineering space, company identification on the exterior of the building, employee and customer parking facilities, utility of the building (ease with which the building's facilities could later be altered) and how to notify his

customers of the new location.

In efforts to determine the type of building most suited to a warm air heating dealer-contractor's operation, Mr. Pataky looked for a building that would provide 25 percent office area, and 75 percent shop and storage area.

While keeping these problems foremost in mind, Mr. Pataky also sought a building that was of modern construction and design, and located on a street where automobile traffic was steady. A corner location was more desirable than other types of buildings. After outlining his requirements to a

realtor, he personally canvassed the preferred neighborhoods.

A building with the general requirements was located and contained the following physical features: It was a one-story building located on a corner, faced a main thoroughfare, and had adequate parking facilities in the rear for employees and customers.

The building was new, it had been designed to meet the requirements of an outdoor sign fabricator. The interior contained space that could be used as a display room and for several offices with adequate toilet facilities. Mr. Pataky would have preferred a larger area for use as a showroom, and full-length windows for display purposes.

Signs Identify Company

Plans for company identification included a sign across the front parapet wall which would serve primarily as identification of the company and the services it renders. This sign is made up of 12 in. high red raised plastic letters on a white background. At night, a timer turns on floodlights that make the letters stand out against the white background.

Future plans call for a display sign on the side of the building that will cover the forward 12 ft of the wall. It will describe the products handled by the company



RECORD OF JOB COSTS are examined weekly by Adam Pataky. A systematic examination of material costs, production labor costs and overhead are coordinated to provide a suitable gross profit

and the services it renders. This side wall sign will be seen by motorists who either drive toward the building, or use the side street.

An additional sign is planned for the roof of the building. It will be a V-shaped sign, with the point of the sign facing the front of the building. This arrangement will permit each side to be slanted diagonally. The roof sign will be lighted at night.

The advantage of this type of sign is it will attract the attention of motorists coming from either direction and enable them to identify the company and its services.

Considerable attention is given to the wording and shape of these signs because of the heavy bus

traffic on the main thoroughfare. Directly across the street from the company is a frequently used bus stop, and riders have a good opportunity to read the entire message. Each of these signs is painted in two colors to attract readership and interest.

Interior Organization

Inside the building, the offices and display rooms are decorated in modern style. Spruce paneling is used on the walls. Ceilings are acoustically treated.

In the display room are several furnaces, a hot water heater, and an electronic air cleaner. Display signs and ornamental decorations



PROCESSING A NEW ORDER is salesman Swede Olson (left) and office manager Bill Whalen, who keeps a complete record of each job so operating costs might be quickly adjusted if they become excessive



AWAITING SHIPMENT to job site is equipment being temporarily stored in shop area. All components of the job are assembled at one place, and are checked before being sent to the job site

are around each of these pieces of equipment.

In the main company office the staff's desks, filing cabinets and other essential office equipment are arranged to provide a maximum of light. Lighting in the office was scientifically arranged to create a pleasant atmosphere and to make customers and prospects feel at home.

Special Interview Office

A separate office, off to one side of the main office, is the salesmen's interview office. This office also includes the company's catalog file and a drafting table for engineering work. Catalogs and drafting facilities help to create the favorable impression that installations made by the company will be adequately designed beforehand.

The president's private office has paneled spruce walls with acoustically treated ceilings and contains well spaced, comfortable furniture. It is tastefully decorated as is to be expected of an efficient executive's office.

Divided Shop Area

The shop area is theoretically divided into separate sections, one for fabrication, the other for equipment and parts storage awaiting movement to the job site. This arrangement makes it practical to keep the shop orderly and clean at all times.

Customers are invited to examine the shop and to note the systematic handling of orders.

When an order is being processed, all equipment for the order is moved to one area in the storage section of the shop. Cartons that contain fittings, odd small parts, etc., are placed either on top of the larger packages or immediately adjacent to the larger packages. When the equipment is to be moved to the job, the mechanics loading it on the truck can check off each piece from the



FEATURES of a heating system are described to a prospect by Adam Pataky, owner, Adams Heating & Cooling, Inc., in his attractively decorated showroom

job sheet without having to hunt up the parts in the stockroom. This also helps to avoid returning to the shop for some part not on hand when the installation is in progress.

The shop has two entrances. One is a standard size door for personnel use, the other an overhead garage type door to permit small trucks to back into the shop for loading or unloading during inclement weather. The shop ceiling height of 12 ft makes this practical.

Separate Heating Systems

Separate heating systems are provided for the office area and the shop area. The office area is heated by an overhead mounted

horizontal furnace and air distribution system that is located in the shop area. The shop area is heated by properly spotted direct-fired unit heaters.

This arrangement makes it practical to either turn off or reduce shop temperatures on days and evenings when it's not in use, but to be able to provide adequate heat to the office area during all periods when needed.

A direct mail program was used to inform customers of the new address. The message in this letter not only told customers about the company moving to its new address, but invited them to come in and see the new equipment on display and hear about how it could contribute to their comfort.

When your business is threatened by the electrical contractor, dealers were told at the OHI convention, hard selling alone will win the order



ELECTRIC HEATING PANELISTS review consumer advertising used by utility company to determine best sales approach for warm air heating and air conditioning dealer-contractors

Competition Growing from Outside of Industry

"You MUST intensively promote and sell the benefits of central warm air heating systems if you are to offset the efforts made by electrical contractors who are taking aggressive steps to sell direct electric resistance heating units to both the new house and old house markets," said O. U. Mutz, Peerless Corp., as he addressed delegates attending the 38th annual convention of the Oil Heat Institute of America in New York. "Half-hearted efforts to tell your story to the builder and the public will not be sufficient to offset the programs now under way by electrical contractor associations with the support of utility companies throughout the country."

Dealer Advantages

Outlining the advantages that warm air heating and air conditioning dealer-contractors can use to sell central systems in the face of competition from direct resistance systems, Mr. Mutz named:

gentle air motion, filtered air, humidity control, even temperatures between floor and ceiling, odor control, lower fuel bills, and adaptation to summer air conditioning.

These are the sales tools that a central warm air heating and air

conditioning dealer-contractor has in addition to all of the advertising claims made by ads currently in use by utilities and other parties interested in selling only direct resistance heating equipment.

Several sample advertisements were shown the audience. The claims listed were read, and it was explained how they not only apply to any heating system but specifically apply to a central warm air system which offers additional advantages.

Weakness of Present Systems

In closing, Mr. Mutz outlined the various types of direct electric resistance systems now in use and pointed out how each of them fails to supply the needs of a homeowner who is seeking true comfort.

He advised the delegates to go out and sell central warm air heating systems in the face of competition from direct electric resistance heating systems because: "you have a moral obligation to tell your



CONGRATULATIONS on his appointment as managing director of Oil Heat Institute of America are received by Charles H. Burkhardt from Fred Heaney, president of the association. Mr. Burkhardt replaces R. H. L. Becker, who is retiring

CONVENTION SESSIONS were the largest in the history of the association and were actively participated in by the enthusiastic audience



prospects and customers about your business, which is heating, and because they look to you for the advice needed to make a wise choice."

Mr. Mutz was a member of a panel moderated by John Olson, Nu-Way Corp., with co-panelists Robert Barr, Jet-Heet, Inc. and Richard C. Wright, Iron Fireman Mfg. Co.

Each of the other panel members urged the delegates to take steps when they returned home to inaugurate programs that could be put to use immediately if their particular area is being faced with competition from direct electric resistance heating interests. And if

their area is not at present faced with this competition, to build a program that could be put into effect if and when such competition was undertaken by interests outside the heating industry.

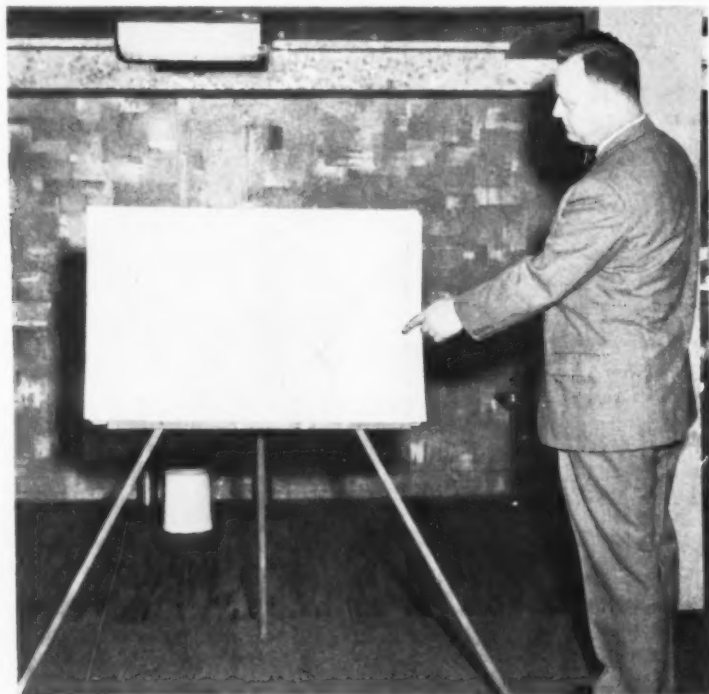
Other Topics Discussed

Other sessions held during the convention covered such subjects as "Using Service Records to Increase Equipment Sales"; "Using Business Ethics to Stabilize Business Sales"; "How Wholesalers Can Help Dealer-Contractors to Sell"; and "Increase Your Profit with All-Year All Oil-Fired Air Conditioning Equipment."

Besides these subjects that appealed primarily to warm air heating and air conditioning dealer-contractors, other subjects of particular interest to oil distributors were covered.

Fred Heaney, of Skaggs-Walsh, Inc. was re-elected president of the Oil Heat Institute. Vice presidents for 1960 from the Manufacturer Div. are: Stanley Czarnecki, Eddington Metal Specialty Co.; G. M. Marin, Sun-Ray Mfg. Corp.; and Larry D. Sibley, Control Div., Electronics Corp. of America. Vice presidents for 1960 from the Distribution Div. are T. R. Loizeaux Sr., T. R. Loizeaux Fuel Co., and Al Loucks, Home Fuel Co.

QUICK ESTIMATING of heat loads from 8 1/2 x 11 in. graphs (enlarged here for instruction purposes) was explained by Walter O. Noyes Jr., Bennington, Vt. dealer



DU PONT ANNOUNCES...



New "Zephyr" Containers for "Freon" Designed for Your Convenience

- Built-in carrying handle
- Can be used upright or inverted
- Can be stacked
- New handwheel valve
- Lighter in weight
- New 50 lb. size

These new "Zephyr" containers can be used either upright or inverted without special blocks or stands. A permanent collar protects the valve and serves as a built-in carrying handle. These are the

only refrigerant containers that can be stacked one on top of the other. They are shorter—lighter—easier to carry. A 50 lb. size is now practical. No wrenches are needed because these new containers also have a new type handwheel valve. They will stand upright in your truck.

"Freon-12" and "Freon-22"—the premium quality refrigerants—are now available in these new "Zephyr" containers in 25 and 50 lb. sizes from your leading air conditioning and refrigeration wholesalers. Place your order for "Zephyr" containers today.

Please turn page for another announcement ►

NEW TOP *and* VALVE

*are being added for your convenience
to Standard 25 lb. cylinders for "Freon"*



This new "Spintop" cylinder is now available in addition to the Standard 25 lb. cylinder with hood cap. The "Spintop" is a convenient carrying handle, valve protector and stand. Being free to rotate, it provides easy access to the valve. The regular valve has been replaced with a convenient handwheel type that includes a special spring-loaded pressure relief device for added safety.

Now—a Container for Every Use

For your convenience "Freon" refrigerants are offered in a family of containers*. Each of these types of containers has its own distinctive advantages. The container that best suits your needs is available from your leading air conditioning and refrigeration wholesaler. Call him today for your order of "Freon" refrigerants.

*1 or 2 lb. "Can-O-Gas" containers of "Freon" refrigerants are available from the Virginia Smelting Co., our nationwide sales agent and authorized repackager.

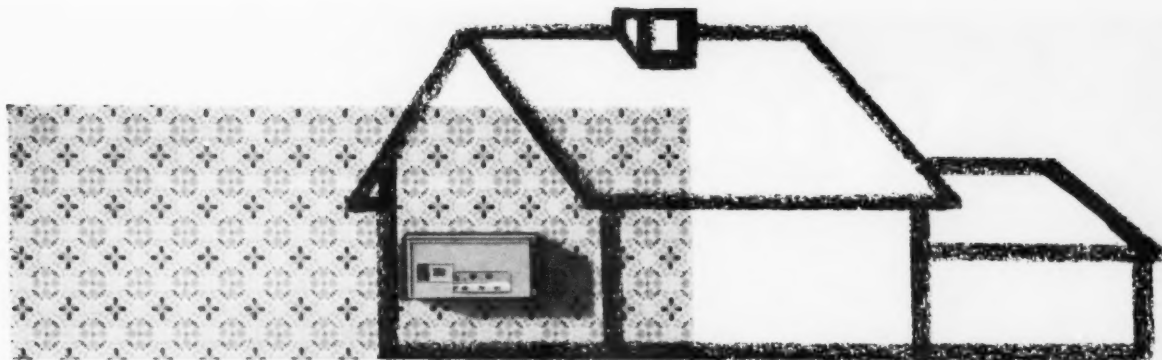


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New A-P Model 188 Thermostat



This heating thermostat will complement any decor. A beige beauty that combines clean, modern appearance with quiet, dependable operation.

Easy on the eyes in other ways, too! No squinting or neck-craning to read this clear, horizontal thermometer. A feather-touch adjusts the temperature anywhere from 45 to 85 degrees. There's also a 3-position cycling adjustment — slow, normal, fast. Easy to install, too! Simple mounting bracket requires only 2 screws and just a few minutes. No leveling is needed. Switch is snap-action type. Vibration won't cause contacts to flutter.

All good reasons why the 188 would be a welcome addition to your heating equipment. For complete technical data, write:




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CONTROLS COMPANY OF AMERICA

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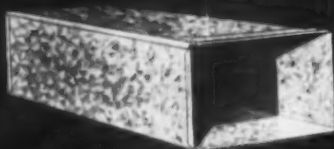
"Magic Brain"

HEATING AND COOLING

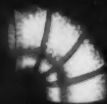


....works "Magic" for your sales!

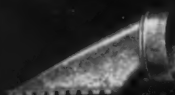
*Seal-Tite** DUCT, PIPE & FITTINGS



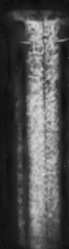
K. D. Rectangular Duct



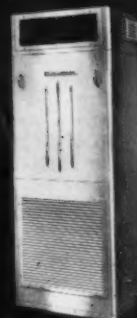
Adjustable Elbow



Top Take-Off



Snap-Lock Round Pipe



Space Console Unit

AIR

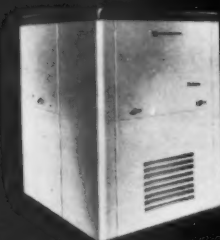
WARM AIR FURNACES



Special Series — Gas and Oil

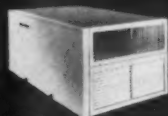


De Luxe Series — Gas

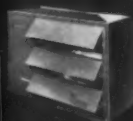


De Luxe Series — Oil

CONDITIONING UNITS



Self-Contained Unit
(cooling and condensing coils in one casing)



Air-Cooled Condensing Unit

**THE INDUSTRY'S MOST
COMPLETE LINE and
THE INDUSTRY'S MOST
UNIQUE SYMBOL**
will help you make more
heating and cooling sales



WARM AIR FURNACES . . . to fit any price range for the home owner or the builder.



AIR CONDITIONING UNITS . . . to fit practically any residential or light commercial need.



Seal-Tite^{*} DUCT, PIPE AND FITTINGS . . . to assure complete "magic comfort" with "Magic Brain" equipment!



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___ "Seal-Tite" Duct, Pipe & Fittings

Name _____ Title _____

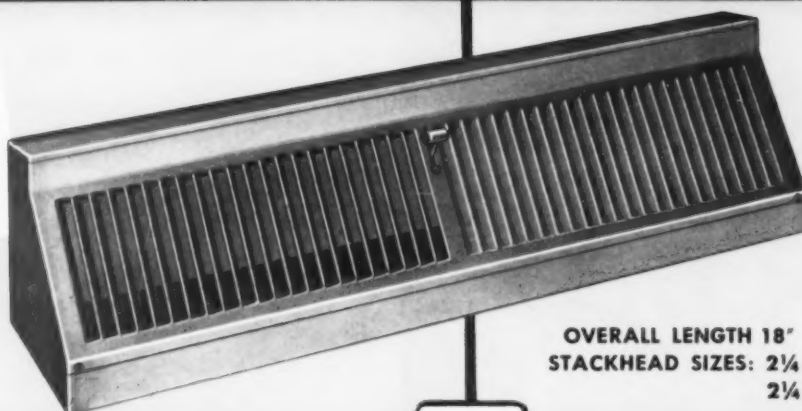
Firm _____

Address _____

City _____ Zone _____ State _____

The A & A P-68 BASEBOARD DIFFUSER is made of fireproof, distortion-free, steel!

NEW
LIST PRICE
\$465



OVERALL LENGTH 18"
STACKHEAD SIZES: 2 1/4 x 12
2 1/4 x 14

**A
&
A**

The P-68 offers many advantages:

- GREATER SAVINGS IN INSTALLATION COSTS
- OUTPERFORMS OTHER DIFFUSERS 3 TIMES ITS SIZE
- 28 SQUARE INCHES OF FREE AIR SPACE

The
A & A Register Company
8327 Clinton Road
Cleveland 9, Ohio

... finding price competition tough?

ADVANCE THE SALE OUT OF THE "LOW PRICE" CLASS

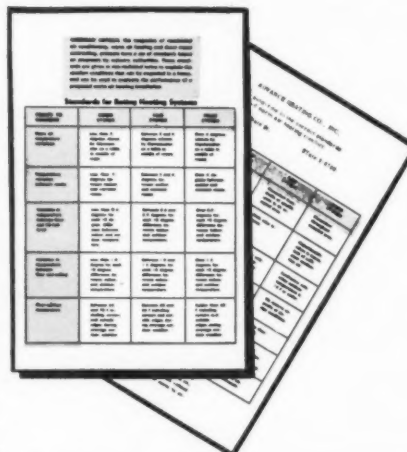
BY USING AMERICAN ARTISAN'S STANDARDS FOR RATING HEATING SYSTEMS

This set of standards, presented in a series of 19 articles in American Artisan and developed by Professor S. Konzo of the University of Illinois, is the most effective sales promotion tool the industry has ever used to beat price competition for quality installations. They are condensed here to help you present the quality story to prospects. These standards are already being used successfully by many heating dealers.

STANDARDS CARDS MAY BE USED . . .

- by salesmen as sales tools
- as direct mail pieces
- as handouts at homeshow, fairs, etc.
- as showroom displays

SEND
THIS
COUPON
NOW!



Editors, American Artisan
6 N. Michigan Ave., Chicago 2, Ill.

SEND ——— STANDARDS CARDS AT
2c EACH, (+25c service charge each
package) cash with order.

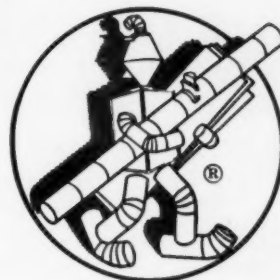
NAME

ADDRESS

CITY STATE



Idea Exchange for Dealers, Contractors



How to Increase Sales Of a Specialty Item

DO YOU HAVE A SPECIALTY ITEM you manufacture and want to increase the number of sales? If so, try the technique used by Phil Young, Young & Bertke Co., Cincinnati sheet metal contractor, to sell the industrial and laboratory ovens his company fabricates.

Mr. Young uses direct mail to reach his prospects. His sales letters have a different approach — one that demands attention, and results show that they get it. (See illustration for type of letter used.)

With each letter goes an eight page well-designed descriptive brochure. The brochure uses two colors — black and deep yellow — and has adequate white space to obtain a three color effect. Large illustrations of the different types of the ovens offered help to produce an attractive appearance of what could easily be an uninteresting sales piece.

Prominently displayed throughout the brochure is the company symbol of a metal man carrying an armful of metal products.

To be effective, direct mail pieces and sales letters must be designed to achieve the following:

- 1) Reach a selective audience.
- 2) Message must be brief and to the point.
- 3) Must be interestingly written.
- 4) Make only promises that can be fulfilled.
- 5) Low in cost.

We're looking for a zither manufacturer!

OBJECT---To make an oven for him. (Surely the enamel on this musical instrument has to be baked on!)

Not only would we bring greater efficiency and money savings to the zither plan--

BUT WE COULD ADD "ZITHERS" TO OUR LIST OF "EQUIPMENT BAKED OR DRIED IN Y & B OVENS." THEN WE COULD SAY WE HAVE PRODUCED OVENS FROM A (aircraft parts, auto electrical equipment, radios, bodies and trim) TO Z!

Our list runs only to "U" (for Unit Heaters--paint baking). Maybe that "U" business is significant, if we may apply a pun. Maybe "U" can use an industrial oven in your plant to bake, dry, cure, finish, dehydrate, burn off, heat treat, anneal, or bond.

The enclosed folder is a new mailing piece sent to you for both immediate and future reference. It tells about our standard and custom-built ovens for any industry, large or small. It may help you plan preliminarily--then our engineers can step in and join hands, brains and hearts with yours to give you what you want.

For whatever purpose you need an oven--for whatever fuel is to be used--for wherever you have a place in your plant, Young & Bertke can build it for you, made to specifications. Mail back the enclosed postage-paid card now and let's start the ball rolling for a new oven for 1960!

P.S. Should you not require a new oven now, there may come a time when you will--especially in this age of prosperity and expansion. So don't throw this folder away if you're not now interested. Just file it for reference and later use.

Massachusetts home modernizer reports:

ALCOA ALUMINUM GUTTERS PAY OFF

"The Alcoa system is by far the most superior ready-made aluminum rain-carrying system available today!"

That's Mr. Gordon I. Erikson, president of Iver J. Erikson, Inc., talking. He should know. Erikson, Inc., Worcester, Mass., is probably the oldest home modernizing company in the United States. The company has been successful for over 80 years.

Mr. Erikson says: "We're a full-line company. We added Alcoa Aluminum Downspouts and Gutters last year—with immediate success and profit. Homeowners are quick to recognize the value in that Alcoa name—they know all about this system—and frequently tell us they've seen Alcoa Aluminum equipment advertised.

"We sell service and quality. Always have. Always will. So, Alcoa Downspouts and Gutters make a natural addition to our line. They go hand in hand with a new aluminum siding job or new roofing. They're the easiest of all systems to install

—they're the strongest, the best looking, and have the most satisfactory joining method. We've had no real hanging problems, no serious call backs."

Mr. Aldo P. Martin, vice president of sales, adds, "Remember, too, that this section of the country is noted for long, hard winters, rough on any system. The 'free-floating' features of the Alcoa system provide the perfect answer to critical expansion and contraction problems. This system takes the worst ice and snow loads I've ever seen in Massachusetts—and, because it's light and easy to handle, we're able to work through most of the year!"

Large praise, indeed. Would you like to find out about the value, quality and year-round profits built into Alcoa® Aluminum Gutters and Downspouts? Call your nearest Alcoa sales office today . . . or send the coupon to: Aluminum Company of America, 1892-E Alcoa Building, Pittsburgh 19, Pa.

Mr. Gordon Erikson, president of Iver J. Erikson, Inc., makes a personal inspection of a home his crew has equipped with Alcoa Aluminum Gutters and Downspouts.



ALL YEAR-ROUND!

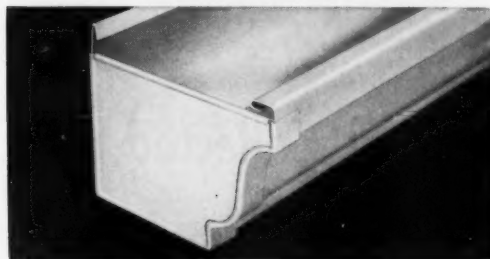


Mr. Erikson, president, and Mr. Martin, vice president, go over sales strategy, discuss Alcoa's advertising and promotion assistance.



Alcoa sales engineers have often stressed the exclusive, easy-to-sell features of the Alcoa system at Erikson's regular weekly sales meetings.

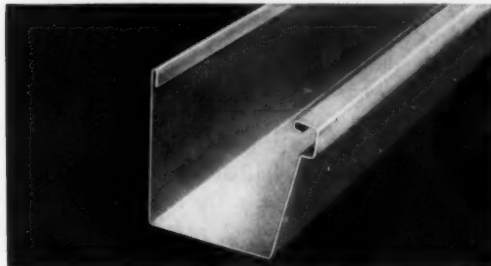
NEW PREPAINTED 5-IN. SYSTEM comes in white enamel, roller-coated uniformly onto bonderized aluminum and baked to a tough, lasting finish.



NEW COMBINATION HANGER speeds installation on both replacement and new construction; "free-floating" principle allows expansion and contraction.



NEW 4-IN. BOX-TYPE SYSTEM costs less, yet features the same 20 per cent thicker alclad metal of the 5-in. system, installs just as quickly and easily, has the same full accessory line.



For exciting drama watch
"Alcoa Presents" every
Tuesday, ABC-TV, and
"Alcoa Theatre" alternate
Mondays, NBC-TV



Aluminum Company of America
1892-E Alcoa Building
Pittsburgh 19, Pa.

Please send me detailed information on Alcoa rain-carrying equipment. I am also interested in learning more about Alcoa's advertising and promotion assistance. Include the name of nearest distributor.

Name

Address

City Zone State

Until Collected, A Check Is Only A Conditional Payment

In a cash sale of goods, the buyer cannot claim ownership until the check has cleared the bank and the dealer-contractor receives the cash

A CUSTOMER used a check to pay for two washable air filters, some replacement humidifier plates and a pulley and belt for a blower motor. This check, deposited by the dealer-contractor in his bank account, returned a few days later marked "insufficient funds." The customer had the goods, and the dealer-contractor held a worthless bit of paper.

In a cash sale of goods, the check of the buyer is not payment but, as it is termed by the courts, merely a conditional payment. Goods in a cash sale become the property of the buyer only after the check has cleared the bank and the dealer-contractor receives the cash.

Another case occurred in one of the northwestern states. The buyer in a cash sale gave his check in payment. Immediately after getting possession of the goods he found a purchaser and promptly resold the goods for cash. A few days later the bank returned customer's check with the laconic memorandum, "short." Acting on this rule of law that the goods were his until he had been paid, the dealer seized the goods that were in the possession of this third party, contending that payment in

this transaction was not made.

Ownership of the goods and the right of possession of the customer, the dealer contended, were conditioned on the payment of this check and as that condition had not been met, there had been no sale and the goods were still the property of the dealer who had a right to possess his own goods.

In sustaining this contention of the dealer and awarding a judgment against the third party purchaser for the value of the goods, the United States court said, "Where personal property is sold for cash on delivery and the purchaser pays by check on his bank, such payment is conditional and the delivery of the property is likewise conditional."

Circumstances very similar to those in this case were before the courts of one of the southern states only a short time ago.

In this case the purchaser made a cash payment of \$50 on account and promised the dealer that he would pay the balance and take up the goods on the following day, a Saturday.

On the next day the purchaser gave the dealer a check for the balance, approximately \$2000 and departed with his purchase, which

he promptly sold to others.

After a few days, when the check was returned by the bank as worthless, the seller sued to recover his goods. A court decision awarded possession of the goods to the dealer. The court said that when a bad check is given in payment in a cash sale, there has been no sale.

"We feel safe in saying that as a matter of custom and convenience, most of the cash transactions of the country are paid with checks. A farmer who brings his cotton, tobacco or wheat to town for sale, as a general rule, is paid by check although all of such sales are treated as cash transactions.

"If, in such a case, the purchaser can immediately resell to an innocent party and convey good title, it would follow that dealers would refuse to accept checks and would require the actual money. This would result in great inconvenience and risk to merchants engaged in buying such produce, since it would require them to keep on hand large sums of actual cash. This would result in revolutionizing the custom of merchants in such matters."

Several years ago in one of the northwestern states a man bought a diamond ring from a jeweler for cash. He gave the jeweler a forged check in payment, then sold the ring to a pawnbroker for half of the jeweler's price.

The courts decision to award possession of the ring to the jeweler has since become famous as outlining the law in situations of this sort.

It stated: "A check is not payment. Payment is considered when the cash is received on it. Where goods are sold for cash on delivery and payment is made by the purchaser by check on his banker, such payment is only conditional and the delivery of the goods also only conditional. If the check on due presentation is dishonored, the dealer may retake the goods."



Century motors circulate warm air

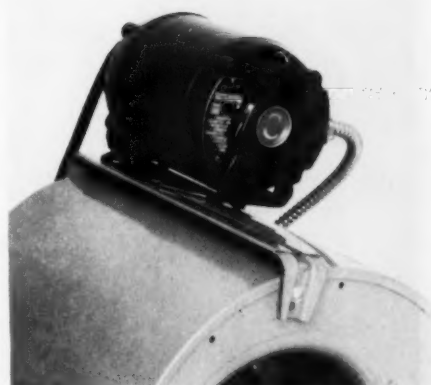
Century motors are helping circulate warm air in hundreds of thousands of domestic furnace systems like the one shown here. Why are Century furnace blower motors so popular? The answer is simple . . . quiet and dependable operation. You make fewer nuisance service calls. You make more profit on each job with Century motors.

Here are some of the features that help make this record possible:

FOR DEPENDABILITY: Insulation consists of heavy "Mylar" slot cells and high temperature baking varnish . . . combination gives high mechanical and electrical strength. Lubricating method is designed to withstand warm air furnace operating conditions. And other features like the trouble-free governor and automatic thermal overload protection increase dependability.

FOR QUIET OPERATION: A cushion base with resilient rings reduces transmission of sound vibrations . . . dynamically balanced rotor gives smooth operation . . . sleeve bearings with shaft floating on film of oil means belt can be pulled up without bearing rumble . . . all contribute to quiet operation of Century furnace blower motors.

FOR MORE INFORMATION: contact your nearest Century Electric Sales Office or Authorized Distributor.

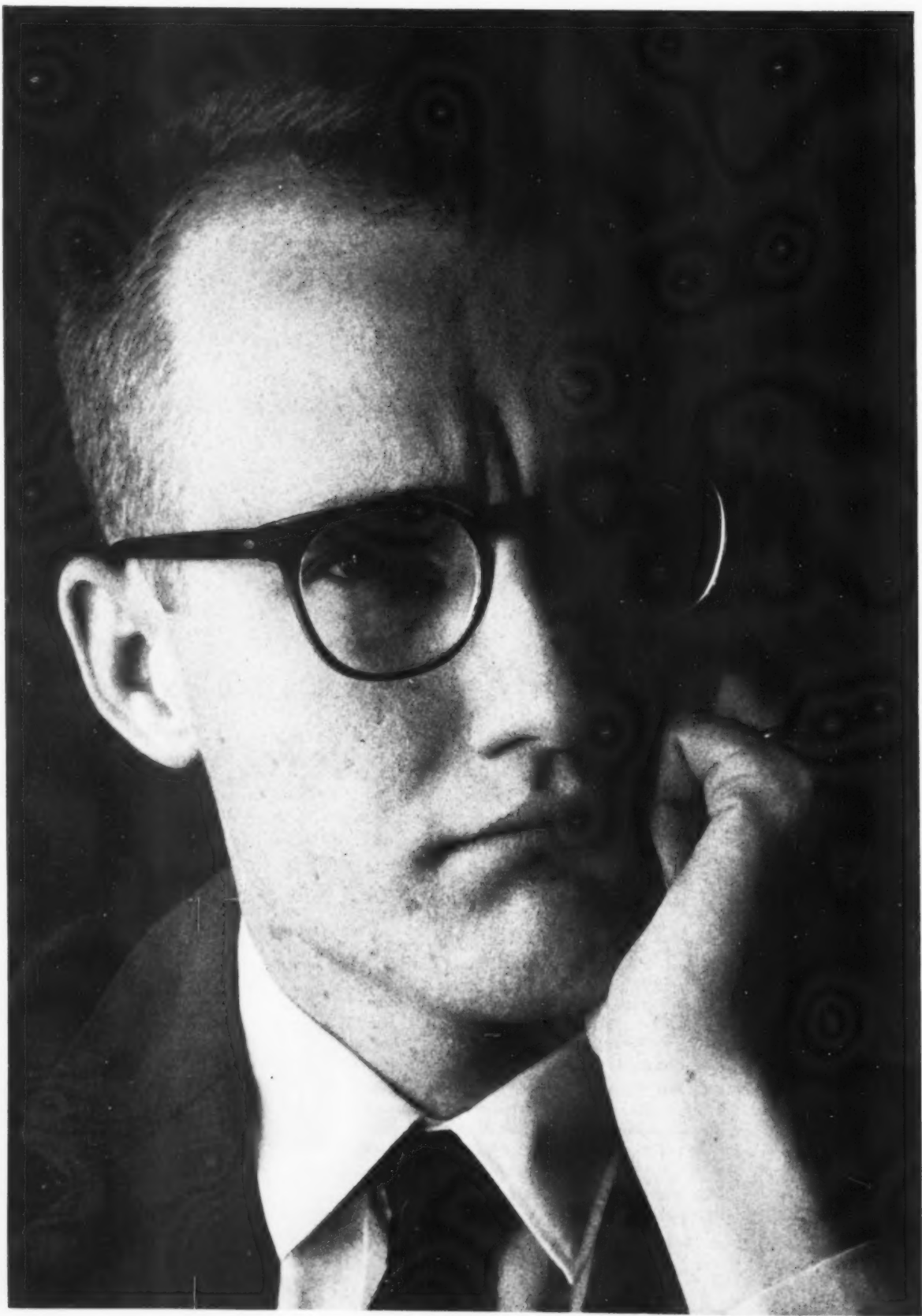


Century Electric 48-frame cushion base motor for furnace blowers. Also available: two-speed motors for combination heating-air conditioning units; and 56-frame motors when 1/2-horsepower capacity and larger is required.

CENTURY ELECTRIC COMPANY

St. Louis 3, Missouri Offices and Stock Points in Principal Cities

Century
60-8



choosy? ← he can't afford not to be

He and his wife are young. On a tight budget. They can't afford to take chances... especially when it comes to household equipment. They know they can't afford to go less than first class when it comes to heating, air conditioning and water heaters. They want to be sure that what they buy does the job—does it right—and does it for a long time without a lot of service and repair bills. When they're ready to install they have no choice but to go for quality *first*. They've had advice. They shop. They know there's not half as much difference in price as in the quality and efficiency of heating and air conditioning systems. Like you, they'll take the one with the reputation... the proved performance

...the name that means quality...

Day & Night

...a name with confidence-building

buy-appeal in **Heating & Air Conditioning**

Get the complete file on Day & Night's complete lines of heating, air conditioning and water heating. It's worth money in the bank. Send to: DAY & NIGHT Manufacturing Co., 855 Anaheim-Puente Road, La Puente, California.



WHAT ASSOCIATIONS ARE DOING

Local Association Reorganizes and Likes It

Increased dues, spelled-out objectives, and high installation standards are paying off in better profits for Indianapolis group

THE KALAMAZOO HEATING and Air Conditioning Association has always been interested in what other local associations are doing to improve the dealer-contractor's economic and social position. Recently, the Kalamazoo group asked Fred S. Gombert, vice president and general manager, Hall-Neal Furnace Co., to summarize the first year's achievement record of the Heating and Air Conditioning Association of Indianapolis, with whose program Mr. Gombert has been very closely associated. Mr. Gombert's report follows:

"I want to tell you about the Heating and Air Conditioning Association of Indianapolis, which is doing something to solve some of the local problems in this industry. It all started in January 1959, when Harold Mutz, Peerless Corp., called a meeting to discuss the Silver Shield program. At that time, the heating and air conditioning association of Indianapolis consisted of 77 members, who paid dues of \$15 per year, and seven sponsor members, who paid no dues but did sponsor one evening meeting a year. Possibly the timing for discussing Silver Shield was bad. Whatever the reason, quite a lot of opposition developed. The dealer-contractors all felt the need for better pricing, but did not see how this was possible through the Silver Shield program. As one man put it, 'We've been telling our customers that they have been getting all the things Silver Shield recommends for years, so how can we come out and get more money for it now?'

Recognize Need for Stronger Association

"I think two things of great importance convinced this group that they needed some type of organization that would do more for the members than the existing association, which had become more social than functional. These two things were: extremely low margin of profit and the threat of electrical contractors' entering the heating industry.

Committees Are Appointed

"The president of the Indianapolis association, Bob Jacobi, who is doing a whale of a job and de-

serves a great deal of credit for any progress that has been made, appointed an industrial improvement committee composed of the people who attended this first meeting. Several sub-committees were later formed, the most important of them being the steering committee, ways and means, and the standards committee.

Spell Out Association Objectives

"The steering committee, at its initial meeting, defined five objectives of the organization, which are:

- 1) To increase profits.
- 2) To stimulate interest and distribute public information on the advantages of warm air heating.
- 3) To upgrade the standards of the industry.
- 4) To standardize certain practices within the industry.
- 5) To provide an understanding of and suggest ways of solving mutual problems of the association's members.

Establish New Dues Structure

"The ways and means committee was given the problem of raising a large amount of money. They did this by eliminating the old dues structure entirely and establishing fees for each dealer-contractor member as follows: \$100 for the first 20 furnaces installed; \$4 a unit for the next 80 furnaces; \$3 a unit for the next 100 furnaces; and so on down to a level of \$1 each. There were about six dealer-contractors who would be in the top bracket. Sponsor members were discontinued, and a sustaining membership was established consisting of jobbers, suppliers and other people interested in the improvement of the industry, whose dues were set at \$250 per year.

Investigate Costs of Doing Business

"The standards committee was asked to investigate costs of doing business in Indianapolis and other cities, recommend certain procedures for doing busi-

(Continued on page 92)

Two Units In One HORIZONTAL COUNTERFLOW

THE NEW *Thatcher* "BLUE RIBBON" Winter Air Conditioner MODEL SCO OIL-FIRED

THE NEW THATCHER SCO UNIT EASILY INSTALLS IN THE FIELD AS A HORIZONTAL OR AS A COUNTERFLOW.



THREE EASY STEPS

- 1 Set unit in desired position.
- 2 Rotate burner as required.
- 3 Rotate draftbox as required.

See your Thatcher representative now for more detailed information, or clip the coupon below and mail direct to Thatcher, builder of home heating equipment for 110 years.



THATCHER FURNACE COMPANY
GARWOOD, NEW JERSEY

BOILERS • FURNACES • AIR CONDITIONERS

THATCHER FURNACE COMPANY
DEPT. AA-5, GARWOOD, NEW JERSEY

Please forward, as soon as possible, more detailed information on your NEW Model SCO Oil-Fired Winter Air Conditioner.

NAME _____

FIRM _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____ 2521

Strongest of All!

Only CRESTOGRIP has this double strength BOX JOINT. All others have conventional lap joint.



Grips Anything!

Flat, square, round or hex. objects. Adjustable to 4 positions up to 1½" capacity.



NO OTHER UTILITY PLIER

Easy to Adjust!

Simply "walk" the rivet recess over the bearing point (shown in cut-a-way view) with a pumping action of handles.



LIKE CRESTOGRIP®

CRESTOGRIP PLIER
No. P210



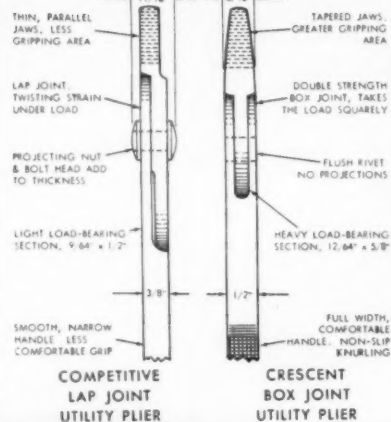
Crescent's No. P210 CRESTOGRIP is a utility plier absolutely without equal. Its distinctive features, illustrated on this page tell why. Exhaustive tests against competitive tools prove CRESTOGRIP to be stronger, thinner in overall dimensions, and capable of greater gripping power.

This versatile tool measures 9½" overall, weighs a mere 12 ounces, yet gets in and grips where no other tool will do the job. Finished in rust resistant zinc plating. Retail for only \$3.15.

Sold by Hardware Dealers and Industrial Distributors everywhere.

World's Thinnest!

Compare these dimensions



CRESCENT TOOLS

Give Wings to Work

*Sign of the Artisan
Symbol of Excellence*



Crescent is our trade-mark, registered in the United States and abroad, for wrenches and other tools. Sold by leading distributors and retailers everywhere and made only by **CRESCENT TOOL COMPANY, JAMESTOWN, NEW YORK**



GAIN *More* SATISFIED CUSTOMERS WITH THE ADDED APPEAL OF *Quality-Assured* GM DELCO HEATING-COOLING

COMPACT, TOTALLY ENCASED UNITS

adapt ideally to attractive closet installations, saving your customers valuable floor space.

A NATIONAL BRAND PRODUCT, advertised and distributed coast-to-coast is more readily accepted by your customers.

FACTORY TRAINING ON INSTALLATION AND SERVICE available for your personnel.

AN ENGINEERED LAYOUT SERVICE

for your project applications that assures the most efficient size unit for every heating and cooling installation.

BACKED BY GENERAL MOTORS REPUTATION, a world-renowned name for quality products.

YOU HAVE MORE TO SELL

with the complete line of Delco furnaces, boilers, water heaters and air conditioners.

You'll do better with Delco.



Take advantage of national brand product acceptance. Eliminate any uncertainty about the comfort of your customers in any climate by

using GENERAL MOTORS-DELCO HEATING AND AIR CONDITIONING. Write, wire or phone for more details.

**DELCO
APPLIANCE DIVISION**

Rochester 1, New York

GENERAL MOTORS CORPORATION

WITH THE ASSOCIATIONS

(Continued from page 88)

ness and set up standards for engineering and installation. This committee was expected to make recommendations concerning service work, discounts and general over-all policy.

"Following its investigation of job costs in the area, the committee recommended that, in order to get a fair margin of profit, material and labor costs be marked up 50 percent. It investigated service costs as well as service charges in other cities and found that the average charge in Indianapolis was below the established prices for service in other large metropolitan areas.

Members Exchange Information

"All of the leading dealer-contractors got to know each other much better through the bi-weekly luncheon meetings, and there was no hesitation in exchanging information on job prices and methods used in arriving at cost figures. In the late spring of 1959, one of the leading dealer-contractors increased his prices, and I think, without exception, all of the other association members were glad to follow. Everybody had felt the need for a better price structure but all were afraid to make the first move.

Gas Utility Is Sustaining Member

"The new association has now been in existence a little over a year, and there are now nine sustaining members paying \$250 a year. One of these is the Citizens Gas & Coke Utility which, since becoming a member, has worked with association members and committees very closely in handling gas release permits. Both the gas company and the dealer-contractors feel they have benefited materially.

Cooperate With Electric Utility

"A year ago, the association was searching for ways to fight electric resistance heating, which was being promoted by the electric utility. Now the Indianapolis Power & Light Co. is a sustaining member. What started out to be a battle has resulted in benefit to all. The utility no longer promotes resistance heating, and in the future will promote electricity as a fuel and circulated warm air as the method of distribution. The association and the utility are now working together on joint promotions for air conditioning. My advice to dealer-contractors is — work with your electric utility and it will work with you. The utilities are going to spend a lot of money promoting electric heat. They are anxious to promote good installations, and we know this means circulated warm air. I believe that electric heating, as an im-

portant segment of the market, is some years away. But when electric heat is used, the warm air people should and can install it.

"The leading warm air dealer-contractors in the Indianapolis area are all members of the association. Higher dues have permitted the hiring of an executive secretary and have also enabled the association to get started on an aggressive advertising campaign. Both old and new house jobs are selling at better prices. Dealer-contractors are doing more selling and less bidding.

Objectives Have Been Met

"Now let's look at the way objectives have been met:

- 1) Profits are better.
- 2) The advertising program is doing a real job of promoting warm air heating, and this information is reaching the public.
- 3) Heat losses and layouts are being figured on all jobs according to the National Warm Air Heating and Air Conditioning Association's recommendations.
- 4) Members have standardized on several procedures: a) filing of liens; b) contracts; c) layout; and d) general understanding of the responsibility that exists between general contractors and dealer-contractors.
- 5) Perhaps the greatest benefit of all was the achievement of the fifth objective. There is a much better understanding of mutual problems among members and they are doing something about them.

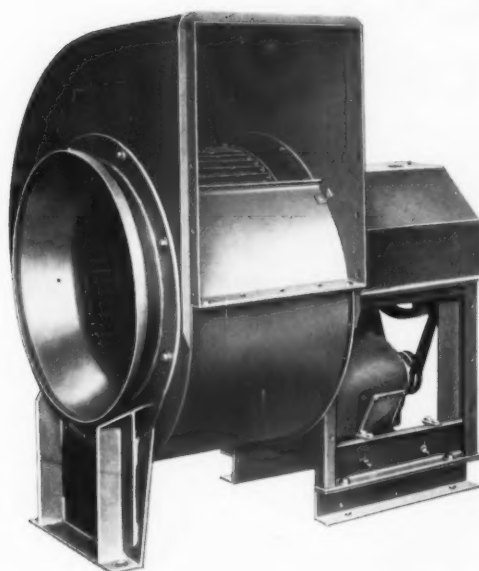
Trends Indicate More Quality Sales

"As to the future, I think the dealer-contractor will enjoy better opportunities than at any time during the last decade. Through Silver Shield programs and activities of associations like the one in Indianapolis, something is being done about industry problems. Better heating jobs are becoming easier to sell. According to Fortune magazine, people are spending more money on the basic home and its equipment. It is becoming increasingly clear that 'the home is replacing the car as a symbol of American status.' People are doing more entertaining in the home and are willing to buy the items that assure comfort in the home. They are beginning to think more about heating and air conditioning equipment, electronic filtration, better humidification. We have a wonderful opportunity to cash in on this trend of selling top quality heating and air conditioning jobs because at long last, homeowners are becoming comfort conscious instead of cost conscious."

(More association news on page 96)

CLARAGE

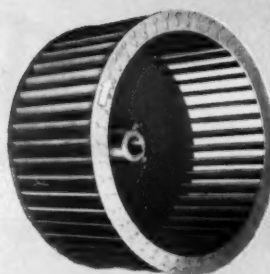
*New line of
.....
V-belt driven
Ready Units*



*Exceptionally sturdy,
quiet, ready-to-run
fan sets*

- for volumes up to 25,000 CFM
- for static pressures thru $2\frac{1}{2}$ "
- for clean air up to 300° F.

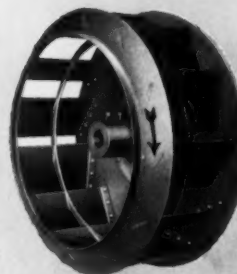
Distinguishing points — over 15 of them — make these new Clarage units outstanding. To mention a few: Better motor ventilation . . . entire drive within frame of unit . . . complete accessibility to motor, drive, and bearings. Learn more about the numerous specific advantages that mean greater value to you from Clarage. Request



LS Ready Units have Low Speed, forward curved blade wheels. These are of the long-recognized Clarage Type HV multiblade design.



or



MS Ready Units have Medium Speed, backward inclined blade wheels with non-overloading horsepower characteristic. These are of the highly regarded Clarage Type NH, Class I design.

Catalog 517 . . . 36 pages of complete information, selector charts, capacity tables, dimensions. Clarage Ready Units are ideally suited for supply or exhaust jobs — indoors or outdoors — for buildings of all types, all sizes.

Write for your Copy



Dependable equipment for making air your servant

CLARAGE FAN COMPANY

Kalamazoo, Michigan

SALES ENGINEERING OFFICES IN ALL PRINCIPAL CITIES • IN CANADA: Canada Fans, Ltd., 4285 Richelieu St., Montreal



...A NEW AIR COOLED CONDENSING UNIT
DESIGNED TO
Please
THE NEIGHBORS

NEW ... 2 or 4 Ton Condensing Unit
 Top-mounted condenser coil ... operating
 noise reduced to minimum.



**Round, Plenum
 Evaporator** ... more
 surface in less space
 ... vertical condensate
 drainage.



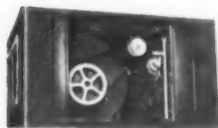
Flat, Duct Evaporator
 ... heavy gauge
 enameled cabinet ...
 built-in drain pan.



Counterflow Evaporator
 slides into accessory
 cabinet ... zinc coated
 drain trays.



**3 or 5 Ton Condensing
 Unit** ... top discharge
 with centrifugal blower
 ... unsheltered outdoor
 installation.



Blower-Evaporator Unit
 ... compact air handling
 unit ... accessory
 plenum-grilles
 available.

Eliminates high velocity air nuisance
 ... minimizes operating noise!

With the new 2 Ton and 4 Ton sizes of Moncrief Air Cooled Condensing Units, a powerful fan, housed completely within the cabinet, propels air through the top-mounted condenser coil.

Condenser air is exhausted upward at low velocity and noise is subdued by the cabinet.

In addition, performance is boosted to peak Btu ratings.

Available in a complete line of 2, 3, 4 and 5 Ton sizes, Moncrief Condensing Units have premium construction with cabinets of 16 gauge, zinc-coated steel for unsheltered outdoor installation.

Matched with Moncrief Evaporator Coils, these rugged units are adaptable to virtually any application — Upflow, Counterflow, Horizontal Flow or Blower-Coil — with unexcelled flexibility.

The low prices of these premium cooling units contradict their excellence.

If you want to advance in the air conditioning business the competitive, profit-making way, call your Moncrief Wholesaler now!

MONCRIEF

THE HENRY FURNACE

MONCRIEF
 SINCE 1895

COMPANY • MEDINA, OHIO

HEATING AND AIR CONDITIONING UNITS

FURNACE PIPE AND FITTINGS



Gas and Oil
 Winter A. C.
 Units ...
 Plenum Type
 Evaporators.



Gas and Oil
 Counterflow
 Units ...
 Counterflow
 Evaporators.



Gas and Oil
 Horizontal Furnaces ...
 Duct Type Evaporators.



Gas or Oil
 Basement
 A. C. Units ...
 Plenum Type
 Evaporators.



Gas or Oil
 Combination
 Year 'Round
 A. C. Units
 Air or
 Water Cooled.

SET THE TEMPERATURE

YOU WANT

IN EVERY ROOM

ZONE-A-TROL

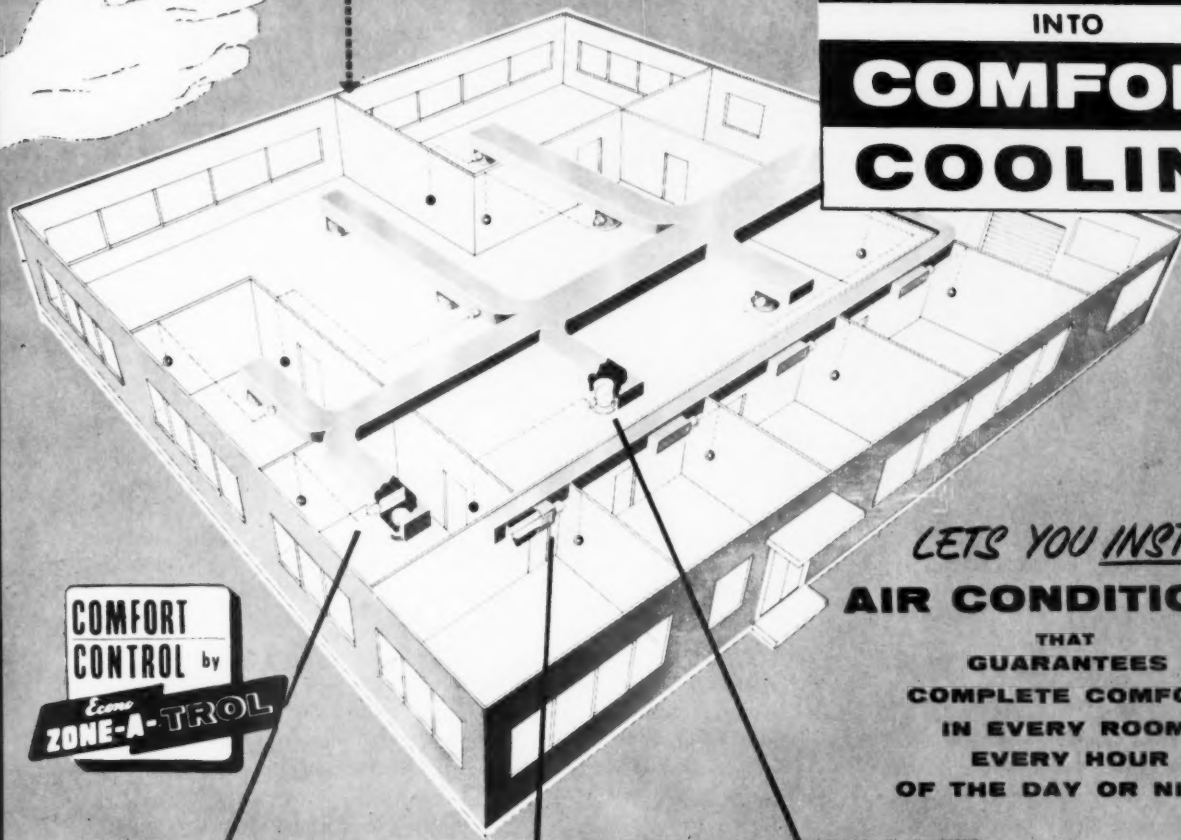
PUTS THE

COMFORT

INTO

COMFORT

COOLING

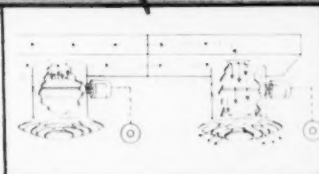
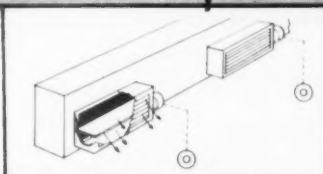
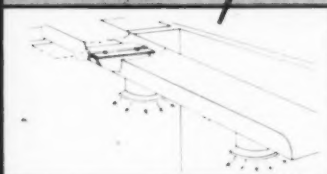


**LETS YOU INSTALL
AIR CONDITIONING**

THAT
GUARANTEES
COMPLETE COMFORT
IN EVERY ROOM -
EVERY HOUR
OF THE DAY OR NIGHT

**COMFORT
CONTROL** by
Econo
ZONE-A-TROL

**THERMOSTAT OPERATED
ZONE-A-TROL**
AUTOMATICALLY
CONTROLS THE FLOW
OF HEATING OR COOLING
TO EACH ROOM OR ZONE



ZONE-A-TROL DAMPER ACTUATOR

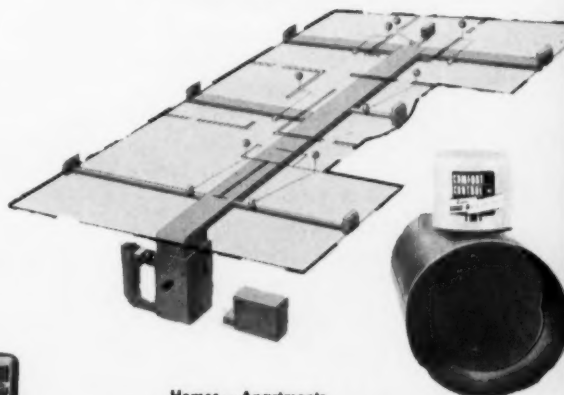
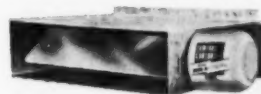
Automatically Controls The Flow Of Air to Each Room

Installed on any new or existing commercial or residential cooling or heating system, Zone-A-Trol now . . . lets you set and automatically maintain the temperature in each room or zone to suit your requirements for comfort at any hour of the day or night.

Automatically controlling the flow of air to each room or zone, Zone-A-Trol makes it possible to shift the full cooling load from one room or zone to another to compensate for such factors as the afternoon sun, shifting crowds of people, etc.

On residential installations, Zone-A-Trol permits you to shift the full cooling load from living areas to bedroom areas for nighttime comfort, thereby permitting smaller cooling units to deliver the same degree of comfort as larger units.

For installing Cooling that satisfies, . . . or making any cooling system deliver . . . **MORE COMFORT**, . . . Zone-A-Trol Damper Actuators provide the perfect answer to installing complete comfort on every job.



**COMFORT
CONTROL** by
Econo
ZONE-A-TROL

ECONO PRODUCTS COMPANY, INC.
Division of Viking Instruments, Inc. East Haddam, Connecticut

A Complete Line
of Zone Controls



For Every Heating
and Cooling System



Homes - Apartments
Commercial Buildings - Schools - Motels

WITH THE ASSOCIATIONS

(Continued from page 92)

NWAHACA Committee Works On Register Testing Program



DISCUSSING TEST PROCEDURES for registers, grilles and diffusers are (l to r) Bernard Harshe, Edward F. Steffner, Harold E. Straub, Robert J. Waalkes, and Gary Baker

CHICAGO — Members of the special register manufacturers committee of the National Warm Air Heating and Air Conditioning Association met recently at Chicago's Bismarck Hotel to further their program of developing uniform test procedures for manufacturers of registers, grilles or diffusers. Once formulated by the committee and approved by the association, the certified testing methods will be used by each manufacturer to rate his equipment.

Data will then be published by individual register manufacturers and will contain an appropriate explanation and symbol identifying the data as having been obtained in the uniform, accepted and approved manner.

Chairman of the committee is Harold E. Straub, research engineer, Titus Mfg. Corp. Recording secretary is Edward F. Steffner, chief engineer, Auer Register Co. Other members include Bernard Harshe, chief engineer, Lima Register Co.; R. J. Waalkes, product

engineer, Hart & Cooley Mfg. Co.; Andrew Lavela, assistant sales manager, Standard Stamping and Perforating Co.; and Gary Baker, assistant director of technical services for NWAHACA.

OHI Launches Diamond Jubilee Luncheon Series

BOSTON — First of a series of regional Diamond Jubilee luncheons was held recently at Boston's University Club by the Oil Heat Institute of New England. Over 400 dealer-contractors, representatives of equipment firms and other industry people from the New England area were in attendance.

Featured speaker was Charles H. Burkhardt, national secretary of OHI's distribution division. Mr. Burkhardt stated that while oil heat people are proud of their three-quarter century of achieve-

(Continued on page 100)

NHAW Publishes Code of Ethics

COLUMBUS, O. — To help promote sound, uniform business policies between wholesalers and their suppliers and customers, the Northamerican Heating & Air-conditioning Wholesalers' Association has drawn up a "Recommended Code of Ethics." Designed to serve as a general guide, the code outlines practices that will help wholesalers give better service to their suppliers and customers. This, in turn, NHAW points out, will bring about a general upgrading of the industry and better service to the consuming public. According to the association, a good wholesaler should:

- 1) Maintain an aggressive and sound sales program to promote the sale of all products carried.
- 2) Give full and complete support to the manufacturers' need for complete and efficient distribution.
- 3) Extend equal treatment to all competing customers.
- 4) Have a clearly defined credit policy.
- 5) Maintain a complete inventory.
- 6) Carry on a continuing program of education for salesmen and dealer-contractors.
- 7) Provide promotional activity allowance on a proportionately equal basis.
- 8) Adhere to manufacturers' policies in regard to returned defective merchandise or merchandise in warranty.
- 9) Prepare a written statement regarding policy on such items as to whom he will sell, from whom he will buy, prices, terms of sales, freight and advertising allowances, returned goods, defective materials, etc.

(More association news on page 100)

high output... minimum effort

SET NEW WORK STANDARDS



For work in the 15-60 ton range, here's your press brake: Niagara Inboard Drive Series IB. Bends $\frac{1}{2}$ " material up to 6', and lighter gages to 14'.

Nothing like it. Has **everything**... to pay off in bigger production profits for you!

EVERYTHING'S INBOARD: Motor, belts, flywheel, clutch, brake, gears... yet, even connections, pitmen and ram adjustment mechanism... yet all accessible. Nothing protrudes.

SMOOTH, SENSITIVE ACTION: Ram can be micro-jogged smoothly, softly to a layout line... even through the work at full capacity, or stopped on a dime! Die setting is fast, easy.

RUGGED TO THE CORE: One-piece, welded steel frame with integral, wrap-around crown and extra deep, solid steel plate bed. Long lasting, laminated, non-metallic ways.

UNIFORMLY APPLIED POWER: Center drive for accurate work and die protection.

POWER CLUTCH, BRAKE & TREBLE: For greater production and less operator fatigue; or manual clutch, brake & treble for low initial cost and quick, smooth response.

MUCH MORE, TOO: Adjustable speed drive, power or manual ram adjustment, front mounted control buttons, rocker type and guide bearings, centralized pressure lubrication, wide selection of gages, and numerous other features at your selection.

HERE'S THE WHOLE STORY:
Wrapped up in new 12-page
Bulletin 90... yours
for the asking.



Streamlined, inboard drive

NIAGARA

PRESS BRAKES

NIAGARA MACHINE & TOOL WORKS
BUFFALO 11, N.Y.

District Offices and Distributors Everywhere

"WE DEPEND ON QUALITY TOOLS... THAT'S WHY WE CHOSE WISS!"

says Julius Glenn, V.P.
Abach Sheet Metal Works, Newark, N. J.



Perfect job. Julius Glenn shows Wiss aircraft snips and holes they cut in 16 g. steel panel. A difficult cut made easy with Wiss.



WISS

... Made by Metal Craftsmen for use by Metal Craftsmen

J. WISS & SONS CO., NEWARK 7, N. J.

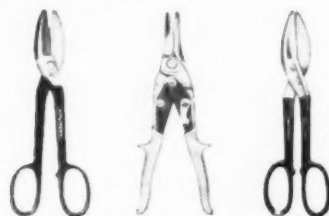
World's Largest Manufacturer of Shears, Scissors, Pinking Shears, Skalloping Shears, Metal Cutting Snips and Garden Shears

"We manufacture custom-made industrial electric ovens. Just about everything is done by hand. The men in our shop are skilled craftsmen. They need the best snips to maintain quality standards and they get them... we use nothing but Wiss snips.

"Wiss snips are always dependable... keep their cutting edge longer... cut easier and they last! They're a sound investment. Pay for themselves over and over.

"I've used Wiss snips for 26 years. You can tell by their performance that what the Wiss people say is true—their snips are made by metal craftsmen for use by metal craftsmen!"

Do you use snips? Then why not get the best? Get Wiss. No matter what your cutting problem, Wiss makes snips that do the job better. Next time you order snips, specify Wiss!

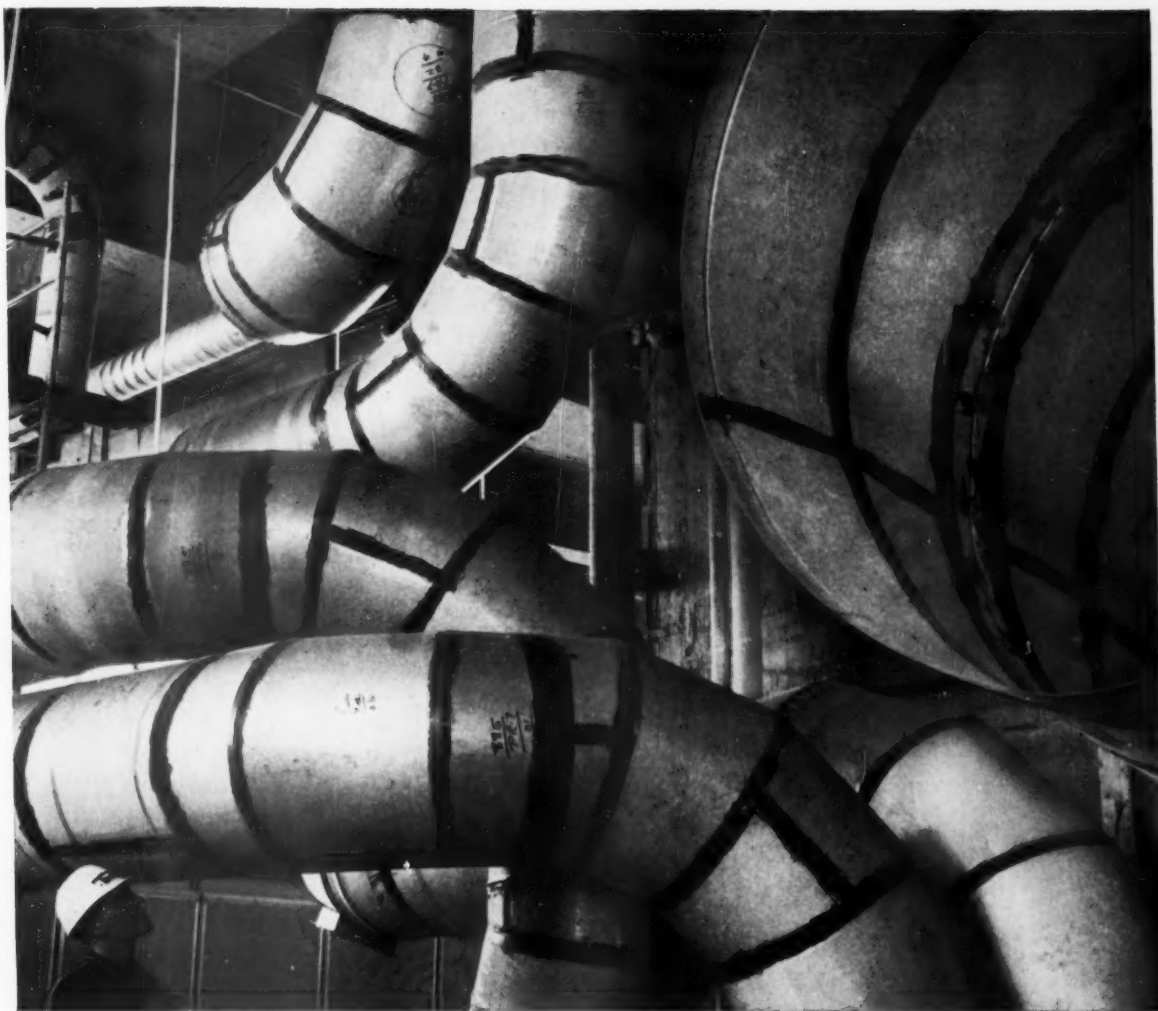


Inlaid ■ Metal-Master ■ Solid-Steel

WISS INLAID BLADE SNIPS cut with lasting sharpness, tremendous power. High carbon crucible steel blades, welded to hot drop-forged frames. Complete range of sizes, 11½" to 17". Models: straight cutting, circular cutting, curved blades, and bulldog notching.

WISS METAL-MASTER AVIATION SNIPS, with amazing compound action, cut with half the effort required by conventional snips! They are preferred by many for their compact size, and ability to make intricate cuts. Left, right and straight cutting models, only 9¾" long, cuts 18 gauge metal. Bulldog combination model, 9¼" long, cuts 16 gauge stainless steel!

WISS SOLID STEEL SNIPS, made from a special grade of solid tool steel, are available in straight cutting, circular cutting and bulldog models from 7" to 16". Priced slightly lower than inlaid snips.



Bethcon Galvanized Sheets used in 9,000-ton air conditioning system

The Chase Manhattan Bank's new main office building towers 810 ft into the lower Manhattan skies. Its 60 stories of office space were designed to house 15,000 workers in year-round, air-conditioned comfort.

The 9,000-ton system, believed to be the largest ever installed in a commercial office building, employs various shapes and sections of ductwork, including square and spiral, as well as specially fabricated risers like those shown above. Bethcon continuously galvanized steel sheets were used in all types of ducts.

Bethcon sheet steel is just right for this kind of sheet-metal work. Strong and rigid, it permits long spans with minimum support. Bethcon is neither too hard nor too soft, making shopwork easy and the end-product sturdy. Bethcon's zinc coating is second to none for its refusal to flake or peel off.

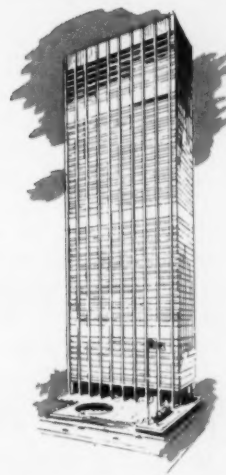
Bethcon is available in a wide variety of gages, with either plain open hearth or copper-bearing (Beth-Cu-Loy) steel. Just get in touch with the nearest Bethlehem representative for whatever details you need.



For strength
...economy
...eye-appeal

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL



The Chase Manhattan Bank Building, New York City. Architect: Skidmore, Owings and Merrill; consulting mechanical engineers: Jaros, Baum and Bolles; general contractor: Turner Construction Company; mechanical contractors: Ralsler Corp. and Kerby Saunders, Inc., a joint venture; ductwork fabricated by National Sheet Metal Works, Universal Sheet Metal Corporation, and Carrier Corporation.

WITH THE ASSOCIATIONS

(Continued from page 96)

Electric Heat, Consumer Education Discussed at Canadian Convention

TORONTO — Advantages of circulated air systems for homes heated by electricity, education of the public, and the development of new warm air heating equipment and techniques were among the subjects discussed at the 17th annual convention of the National Warm Air Heating and Air Conditioning Association of Canada. Other subjects covered included housing trends, sales taxes, and safety standards in the heating industry.

T. D. Bulloch, Bulloch's Limited was elected president of the asso-

ciation, and J. W. Fry, Torrington Mfg. Co. of Canada Ltd., was elected vice president. Members of the 1960 board of directors, in addition to Mr. Bulloch and Mr. Fry, are F. W. Thomson, Lennox Industries of Canada Ltd. (past president of the association); A. M. Latta, Enamel & Heating Products Ltd.; N. K. Smith, Honeywell Controls Ltd.; C. K. Souder, Hart & Cooley Mfg. Co. of Canada Ltd.; J. M. Matthewman, Anthes-Imperial Co. Ltd.; G. M. Fellows, Clare Bros. Ltd.; and C. R. Conn, The Canadian Coleman Co.

Luncheons Promote OHI Diamond Jubilee

(Continued from page 96)

ment, "we are marking this Diamond Jubilee milestone by looking at the future, rather than the past." He described the American house of the future as being completely oil-powered, with heating oil furnishing the energy for heat, air conditioning, water heating, cooking, etc.

Other speakers were C. Everett Elliott, vice chairman for OHI's eastern district division; Marcel A. Fugere, president, and Robert C. Wing, executive secretary of OHI of New England; and representatives of the governor of the Commonwealth of Massachusetts and of the mayor of Boston.

New England OHI Moves to New Offices

BOSTON — Oil Heat Institute of New England has moved into new offices in the Salada Tea building, 330 Stuart St., Boston 16.

Sign Publicizes Association Benefits

INDIANAPOLIS — Officers and directors of the Sheet Metal and Warm Air Heating Contractors' Association of Indiana believe in telling their members (and non-members) the objectives of the association. This sign was displayed at the recent annual convention:

"Working for you and your industry, your association:

- 1) Promotes legislation for the industry.
- 2) Sponsors educational programs for members and non-members at the Warm Air Short Course and Business Management Course at Purdue University.
- 3) Conducts annual conventions and quarterly district meetings.
- 4) Assists local programs of members through such activities as providing a model heating code and supplying speakers for social and civic club meetings."

Other associations, both local and state, are embarking on similar programs to show the benefits that membership brings.

Silver Shield Program Enters Ohio

LIMA, O. — Warm air heating and air conditioning dealer-contractors in the greater Lima area — first city in Ohio to establish a Silver Shield program — recently held a dinner meeting to celebrate receipt of their operating license. Over 250 people were in attendance, including bankers, builders, architects, city officials and representatives of real estate organizations as well as warm air heating dealer-contractors and members of the National Warm Air Heating and Air Conditioning Association. Featured speakers were Congressman William McCulloch and Ohio Attorney General Mark McElroy.

John Paul Timmerman is president of the Lima Area Indoor Comfort Bureau, which will administer the Silver Shield program in Lima.

Report Winning Apprentices In N. Y. Contest

NEW YORK CITY — Winning entry for the first year category in the recently concluded sheet metal apprenticeship contest conducted by the New York State Sheet Metal, Roofing & Air Conditioning Contractors' Association was submitted by William Nowak, Buffalo, N. Y., Local #71. Other winning apprentices are: James Bourdeau, Schenectady, Local #83 (second year); Don Martin, Albany, Local #83 (third year); and Walter Sienkiewicz, Buffalo, Local #71 (fourth year).

(Coming Events on page 104)



You can tell a Metalbestos Man
By the Gas Vent Calculator he uses!

This handy new pocket computer is the only device of its kind to give correct answers in seconds to the most complicated vent design questions. Who's it for? Why the man who installs Metalbestos, of course! It allows him to make his "take-offs" on the spot, give fast accurate bid estimates, save precious minutes on the job. Just one more scientific selling tool from Metalbestos — it's yours without charge.

AVAILABLE ONLY FROM METALBESTOS • Gas Vent Calculator • Color Slide Film "Heat in Harness" • Venting Service Schools • Vent Installation Handbook • "Safety System" Gas Vent Tables • Gas Vent Service Bulletins • Safety System Seals • Sales, Product & Technical Literature • Ad & Article Reprints • Direct Mail & Display Materials.

See your Metalbestos distributor or write Dept. B-2.

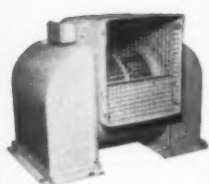


METALBESTOS DIVISION
 WILLIAM WALLACE COMPANY
 BELMONT, CALIFORNIA

MANUFACTURING PLANTS IN BELMONT, CALIF. • LOGAN, OHIO

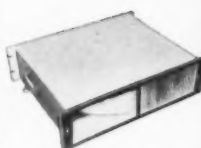


Pressure blower with 2-speed drive.



Exhaust blower with 3-speed drive.

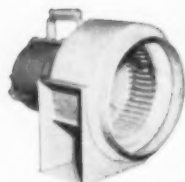
BLOWERS for ENCLOSURES...



Cooling-air circulator for electronics. 500 CFM. 5-inch high cabinet.



Twin pressure blower with 3-speed drive.

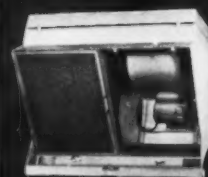


Portable unit for confined areas. High and low static applications.

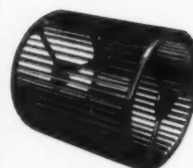
BLOWERS for VENTILATING...



Utility vent set with belt-drive blower.



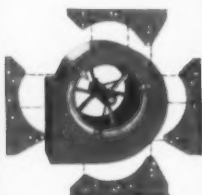
"Filtaire" for commercial kitchen ranges. Complete with blower, motor, grease filters (one removed in photo).



Porcelainized wheels and housings for corrosive conditions.

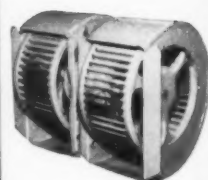


Belt-driven blower for material handling. Special forward curve paddle wheel. High RPM.

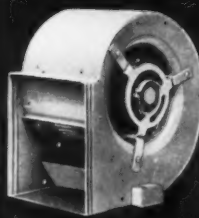


Four-way discharge blower for furnace industry.

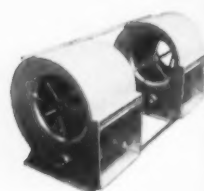
BLOWERS for HEATING, COOLING...



Direct-drive twin blower for low-noise applications.



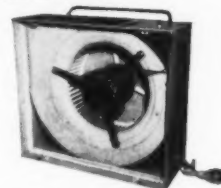
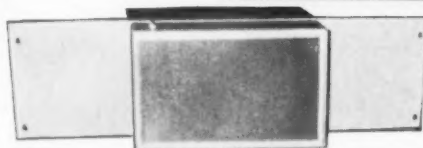
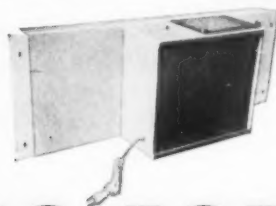
Blower for central heating-cooling has Du-Air damper control for exact 2-volume air delivery.



Belt-driven twin blower with automatic damper control.

SPECIAL BLOWERS...

Air purifying units with special filter pads have extremely low noise level. Right: 650 CFM exhaust unit. Below: 100 CFM window unit and 350 CFM portable (blower exposed).



BLOWERS FOR YOU!

These are only a selection of the blower wheels and assemblies Morrison has developed for electronics, materials handling, ventilating, heating, cooling, air conditioning — virtually every type of air moving application.

What's your line? Send us your requirements ... put our specialized air moving experience to work for you.

Air Moving



Specialists ... Leaders in Blower Product Applications

MORRISON PRODUCTS, INC.

16818 Waterloo Road • Cleveland 10, Ohio
Fort Worth, Texas • Phoenix, Arizona

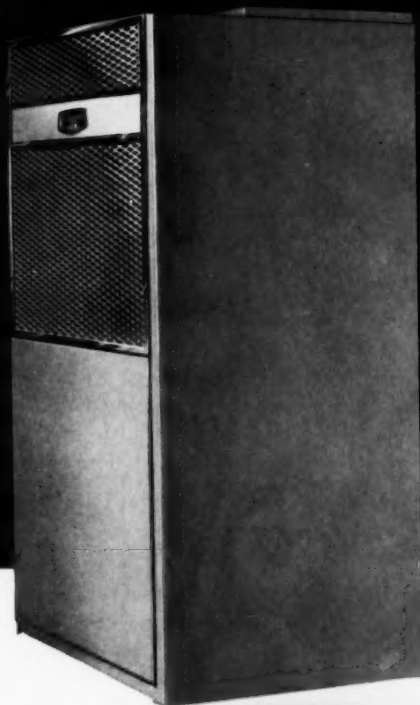


NEW FROM BRYANT!

**Compact new 2½ ton Air Conditioner and
furnace take less than 3½ sq. ft.**

QUICK FACTS: Model 562 is designed especially for 1100 to 1600 square foot homes. Enables you to put full-rated, economical air conditioning into lower cost homes. "Matched" to Bryant upflow or downflow furnaces but easily adapts to other makes.

Bryant units range in size from 22,000 to 83,000 Btu/hr., ARI certified. With 80 Bryant coil-condenser combinations you can cope with any cooling, space and cost requirement. Local factory trained experts to help you engineer, layout and supervise installation. For full information on the new Bryant unit call your Bryant distributor or factory branch. Or write us, Bryant Manufacturing Co., Indianapolis, Indiana • Bryant Manufacturing Ltd., Toronto, Ontario.



**HEATING • AIR CONDITIONING
WATER HEATING**

Coming Events

May

May 26-28 — Sheet Metal and Air Conditioning Contractors' National Association, Inc., annual convention, Hotel Statler, Boston. J. D. Wilder, executive secretary, 107 Center St., Elgin, Ill.

June

June 2-5 — Sheet Metal, Roofing, Heating, Air Conditioning Contractors' Association of Georgia, annual convention, Jekyll Club Hotel, Jekyll Island, Ga. B. L. Noblitt, executive secretary, 208 Red Rock Bldg., Atlanta 3.

June 13-15 — American Society of Heating, Refrigerating and Air-Conditioning Engineers, 67th annual meeting, Vancouver, B. C. R. C. Cross, executive secretary, 234 Fifth Ave., New York.

June 16-18 — Sheet Metal, Air Conditioning and Roofing Contractors' Association of Pennsylvania, annual convention, Lawrence Hotel, Erie, Pa. Earl W. Liebermann, secretary, 1411 Merchant St., Ambridge, Pa.

June 30-July 2 — Carolinas Roofing and Sheet Metal Contractors' Association, annual convention, Ocean Forest Hotel, Myrtle Beach, S. C. H. J. Stockard Jr., executive secretary, P. O. Box 408, Raleigh, N. C.

July

July 7-9 — Roofing, Sheet Metal, Heating & Air Conditioning Contractors' Association of Alabama, annual convention, Buena Vista Hotel, Biloxi, Miss. Ferris S. Ritchey Jr., executive secretary, 405 Frank Nelson Bldg., Birmingham.

October

Oct. 12-14 — American Gas Association, an-

nual convention, Atlantic City, N. J. C. S. Stackpole, Managing Director, 420 Lexington Ave., New York 17.

November

Nov. 14-15 — National Warm Air Heating and Air Conditioning Association, annual convention, Statler-Hilton Hotel, Cleveland. J. M. Martin, managing director, 640 Engineers Bldg., Cleveland 14.

Nov. 18-22 — Air-Conditioning and Refrigeration Institute, annual meeting, Hollywood Beach Hotel, Hollywood Beach, Fla. Geo. S. Jones Jr., managing director, 1346 Connecticut Ave., Washington 6, D. C.

Nov. 27-30 — Northamerican Heating & Air-conditioning Wholesalers, annual convention, Statler-Hilton, Detroit. Wilbur R. Bull, managing director, 1200 W. Fifth Ave., Columbus, O.

1961

February

Feb. 13-16 — American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., semi-annual meeting, Chicago. R. C. Cross, executive secretary, 234 Fifth Ave., New York.

Feb. 13-16 — International Heating & Air-Conditioning Exposition, International Amphitheatre, Chicago. E. K. Stevens, exposition manager, International Exposition Co., 480 Lexington Ave., New York 17.

April

Apr. 5-7 — Gas Appliance Manufacturers' Association, annual meeting, Boca Raton Hotel and Club, Boca Raton, Fla. Gas Appliance Manufacturers' Association, 60 E. 42nd St., New York 17.



At top left in this plant in which sheet metal specialties are produced, there's a run of 24-inch Carrier Spira-Pipe as integral part of the Carrier Air Conditioning System. Fumes from six welding machines along the wall are vented, using a Carrier Fan Section and 22-inch Spira-Pipe — with 12-inch branches at each hood.

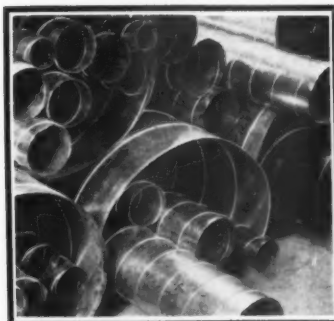
HOW CARRIER SPIRA-PIPE AND FITTINGS SIMPLIFY EXHAUST SYSTEM LAYOUTS

On all types of exhaust systems for fumes, dust and heat, you can eliminate costly layout time, shop and job-site fabrication by using Carrier Spira-Pipe* and fittings. You have a wide selection of lengths up to 20 feet and 16 diameters from 3 through 24 inches—any fractional diameter also available on special order. Spira-Pipe is easily cut on the job. Weighs but a fraction of other types for the same duty. And, fabricated from zinc-coated steel, copper and other metals, it has a 4-ply lockseam construction that provides exceptional strength and rigidity.

To further simplify system layouts and reduce job-site assembly and fabrication costs, standard Carrier fittings include all types and matching sizes. For fast and convenient service, Carrier maintains seven field shops in New York, Philadelphia, Atlanta, Chicago, Dallas, Los Angeles and Toronto.

Want complete information on time-saving Spira-Pipe and fittings? Write Machinery and Systems Division, Carrier Corporation, Syracuse 1, New York. In Canada: Carrier Engineering Ltd., Toronto.

*Trademark



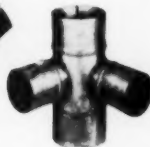
Typical of a complete line of fittings, including die-formed elbows, available for each diameter of Spira-Pipe.



90° die-formed elbow



45° die-formed elbow



90° regular cross

Carrier "Quick-Connector" Fittings, using Marman "Venti-duct," clamp pipe together in minimum time, provide a positive airtight seal, permit quick disassembly.

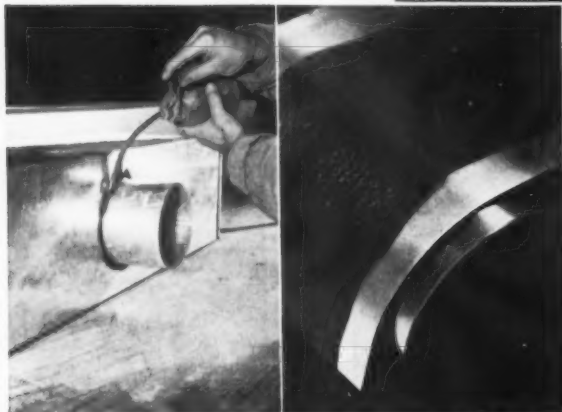
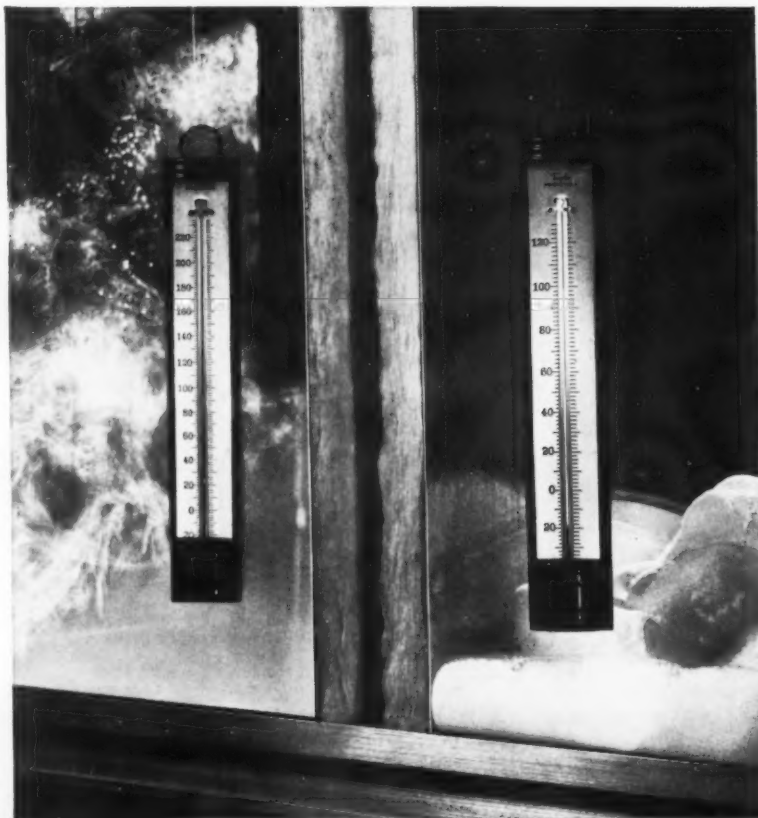


AIR CONDITIONING • REFRIGERATION • INDUSTRIAL HEATING

3M Brand Adhesives and Sealers . . . Insulation Bonds and Duct Seals that HOLD

Even in temperature extremes . . . Insulation Adhesive 1128 **HOLDS**. Heat as high as 250° F. and temperatures as low as -20° F. can't weaken the bond. It holds fibrous glass insulation firmly on metal ducts and buildings. Highly resistant to moisture, 1128 also helps keep insulation dry when used to bond foil to foil where insulation facings lap.

Insulation Adhesive 1128 can be brushed or sprayed to provide both instant grip and long open time needed for positioning the insulation.



Even in high velocity systems . . . Duct Sealer 800 **HOLDS**. This sealer is so tough and flexible that a dry film $\frac{1}{8}$ " thick will withstand bending over a six-inch mandrel at -65° F. Resistant to vibration, it flexes with duct expansion and contraction, won't flow out of seams under pressure even at 180° F. Furthermore, the airtight seal resists water, oil and ageing. Duct Sealer 800 goes on with brush, flow gun or putty knife and sets up so firmly at joints that duct work actually *gains* structural strength.

For more information, see Sweet's Catalog. For free literature about the complete family of 3M Adhesives, Coatings and Sealers for the building industry, see your 3M distributor or write on your company letterhead to: AC&S Division, Dept. SBJ-50, 900 Bush Avenue, St. Paul 6, Minnesota.

ADHESIVES, COATINGS AND SEALERS DIVISION

MINNESOTA MINING AND MANUFACTURING COMPANY

. . . WHERE RESEARCH IS THE KEY TO TOMORROW



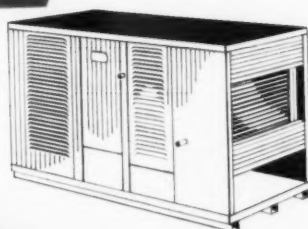
Now WRIGHT-TEMP

offers a complete line of
AIR CONDITIONING EQUIPMENT
for every need

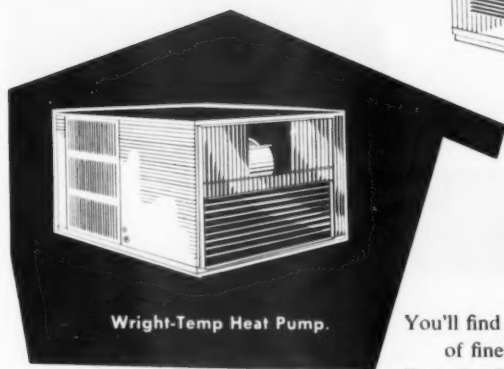
*Wright Air Conditioning
Furnace-Cooling Combinations
and Wright-Temp
Heat Pump*



Wright Air Conditioning



Furnace-Cooling
Combinations



Wright-Temp Heat Pump.

You'll find the famous Wright name—symbol of finest quality in the field—on a *complete* line of refrigerated air conditioning equipment in package and remote models to meet every installation requirement.

Save time, trouble and money by recommending and selling the full Wright line—*one* dependable source of supply for every air conditioning need: commercial, residential, industrial applications; *one* supplier who knows your particular territory and problem.

Wright Air Conditioning and Wright-Temp Heat Pumps are designed and built in the Southwest especially to meet the extreme demands of the Southwestern climate. Superb Wright engineering and quality assure you of complete customer satisfaction.

All models calorimeter rated *Beyond A R I* specified conditions to 115°



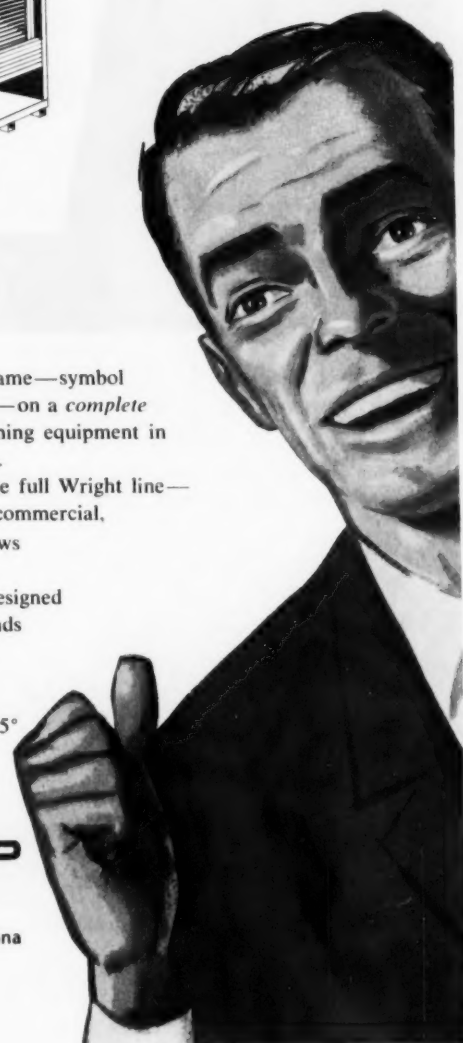
For Complete Information write to

WRIGHT-TEMP
MANUFACTURING COMPANY

2902 West Thomas Road

Phoenix, Arizona

"Creating New Climates for Better Living"



EQUIPMENT DEVELOPMENTS

The latest information on manufacturers' developments is presented here with brief summaries of the applications of these products. For additional product information which is available see this month's New Literature department

Fan-Limit Control

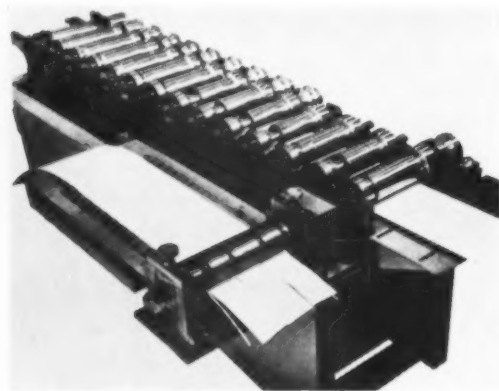
SERIES 530 combination fan and limit controls designed for warm air heating systems. It contains two separate switching units, each independent of the other.



Both switching units are operated by a single liquid charged temperature element for uniform operation, according to the manufacturer. If the element should lose its charge, the safety limit switch will open to prevent the heating unit from operating in an unsafe condition. Controls measure 2 7/32 X 5 27/64 in.—Penn Controls, Inc., Goshen, Indiana.

Lockforming Machine

FOURTEEN STATION lockforming machine for high production of basic parts in the aluminum siding industry. The tool will roll form clapboard aluminum siding at



the rate of 60 to 65 fpm, normal speed with other speeds optional. On the inboard side, special rolls on the 14 stations fabricates the entire 8 in. aluminum sid-

ing panel, pre-punch the elongated nailing slots and weep holes in the bottom section. Approximately 10³/₈ in. of 0.032 or 0.025 in. stock material is used, according to the manufacturer. Power is from a 7½ hp, 1800 rpm, 220/440 volt, 3 phase, 60 cycle motor—Lockformer Co., Dept 11-5, 4615 W. Roosevelt Rd., Chicago 50.

Air Filters

AIRSAN TYPE V-10 air filters designed to protect miniaturized, ventilated electronic equipment, and are made in any rectangular size and thickness varying



from ½ to 4 in. They are available in aluminum, steel, bronze, and stainless steel. Internal media of the filter retains a constant density, according to the manufacturer, that cannot change or shift—Air Filter Corp., 4504 W. Woolworth Ave., Milwaukee 18.

Riveting Gun

"SNAP" riveting gun permits the user to insert and crimp rivets from the same side, without having to get



behind "blind" work surfaces. It can be used for almost all sheet metal and mechanical assemblies, according to the manufacturer, and eliminates many welding op-

Builder saves up to
\$85 per house



with *Transite Air Duct*

**Strong ... durable ... Transite eliminates
costly concrete encasement**

More and more builders are coming to realize the profit opportunity in perimeter heating-cooling systems ... and the additional savings when Transite Air Duct is used.

One example is Herbert Kendall, New Jersey builder. He credits perimeter heating—and the elimination of

costly basements—as a major reason why he can market his \$17,000 homes for less than \$10.50 per sq. ft.

Mr. Kendall also says that Transite® Air Duct alone saves him up to \$85 per house in concrete and placement of it!

In perimeter heating-cooling systems—Transite Air Duct saves in both time and material. It needs no encasement ... can be laid directly on the prepared bottom. Transite also

won't float ... needs no special supports or anchors. Just position ducts and pour concrete. Transite won't crush, dent or deform. Transite's light weight and 10' lengths make installation still easier. Fittings can be made right on the job.

Send coupon today for your free copy of the Transite Air Duct Data Kit. It contains specifications, installation methods—even testimony from builders about dollar savings.



Transite reduces your concrete costs substantially. It needs no encasement ... can be laid directly on prepared bottom.

JOHNS-MANVILLE

BOX 14AA, NEW YORK 16, N.Y.



Gentlemen:
Kindly send me a copy
of the Transite Air Duct
Data Kit.

Name _____
Firm _____
Address _____
City _____ Zone _____ State _____

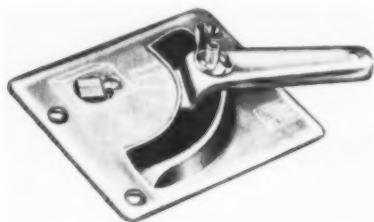
equipment developments

(Continued)

erations and the use of sheet metal screws and bolts. Its clinching action pulls parts together with up to 600 lb of force. A special rivet is inserted into the tool, handle squeezed, and the fastening job is completed—*Richline Co., Inc., 1531 E. Franklin Ave., Minneapolis, Minnesota.*

Damper Regulator

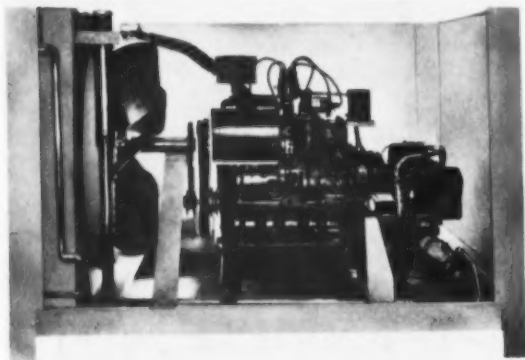
"WEDGE-LOC" is of heavy construction, rectangular in shape, and can be used for dampers up to 20 in. Be-



cause of its unique wedging and locking action, the manufacturer claims it virtually eliminates damper rattles and minimizes air leakage. Its indicator dial is both easy to read and easy to adjust—*Duro-Dyne Corp., Route 110, Farmingdale, L.I., N.Y.*

Gas Powered Air Conditioning System

NATURAL GAS OR LP gas powered air conditioning systems features completely automatic temperature control and low operating noise level. Models currently available are 5 and 7½ ton capacities with optional

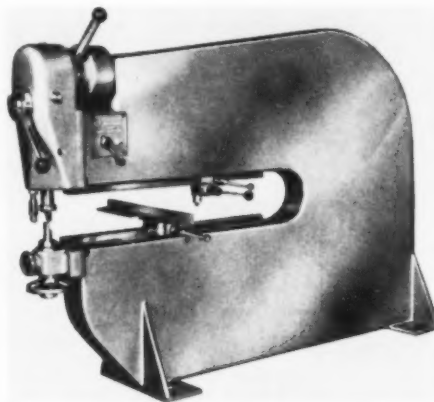


carburetion for use with natural or LP gas. Average fuel requirement only 20 cu ft of 1000 Btu natural gas per-ton-hour of operation. LP gas fuel consumption is less than 1/5 gallon per-ton-hour. At 100 F ambient temperature the 5 ton models have a rated capacity of 60,000 Btuh at 40 F suction and 68,500 Btuh at 45

F suction. The 7½ ton models have a rated capacity of 90,000 Btuh at 40 F suction, 100,000 Btuh at 45 F suction, according to the manufacturer. System can be installed either indoors or roof mounted with two connections to cooling coil in the duct system—*Gas-Cool Div., Vector Engineering Contractors, Inc., 3210 Elm St., Dallas 26.*

Sheet And Plate Working Machine

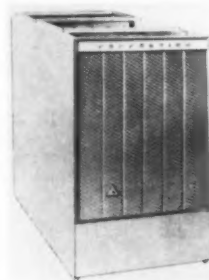
"METAL WORKER" has an edge cutting capacity in mild steel of 15/64 in. and has a throat capacity of 43




in. A full line of tooling is available for straight cutting, louvering, nibbling, planishing and flanging, according to the manufacturer—*Homstrand Machine Tool Corp., Greenwich, Conn.*

Lowboy Furnace

"STYLIST LOWBOY" gas-fired furnaces are 43 in. high and come in these four sizes; 75,000, 100,000, 125,000 and 150,000 Btuh. Low silhouette design is made possible, according to the manufacturer, by a compact "heat bank" heat exchanger that collects heat in the



flame contoured bottom section and then carries it up through narrow passageways for maximum utilization. It has a full steel bottom that adds rigidity and makes grouting unnecessary. Four leveling bolts in the base eliminate the need for special concrete bases or shims



...a burner
demonstration
that sells

...the **BARBER**
Tele-Tube Burner with a telescoping venturi

This BARBER sales engineer is bursting with confidence as he demonstrates and sells the low-cost Tele-Tube adjustable burner, which incorporates all the design, operating and maintenance features most wanted by contractors, dealers and wholesalers.

He demonstrates the unique telescoping venturi that adjusts to the exact insertion length required for efficient firing. He points out that the Tele-Tube units with 50,000 to 225,000 BTU and 200,000 to 400,000 BTU capacities fit 95% of all inshot burner installations. In addition, the units feature advanced combustion design, upshot firing characteristics and

will operate efficiently on all gases—including LP air. The Barber sales engineer also details the sturdy, lightweight steel construction and its ease of installation and serviceability.

This successful BARBER sales engineer makes money and also helps his customers make a profit as he sells the BARBER line.

It will pay you to investigate the many advantages you get with BARBER products. Contact us today. For prices and other information, just attach the coupon to your business letterhead. Wire or phone.

*Manufacturers Of
Engineered
Quality Burners
Since 1918*



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1052 EAST 134th STREET • CLEVELAND 10, OHIO
MULberry 1-8265

To: Sales Manager
The BARBER Manufacturing Co.
1052 East 134th Street, Cleveland 10, Ohio

- ☐ Please send full specifications and prices on the Tele-Tube.
☐ On all other BARBER gas burners. ☐ Have salesman call.

Name _____ Title _____

Company _____

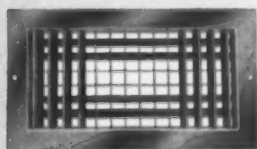
Street _____

City _____ Zone _____ State _____

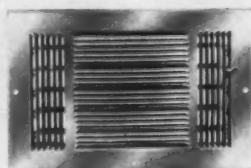
*You can predict performance
if they are...*

**Air
Mate**

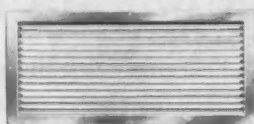
REGISTERS, GRILLES
DIFFUSERS



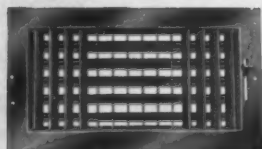
ADJUSTABLE
DEFLECTION GRILLES



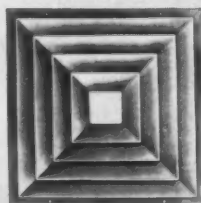
SIDEWALL OR
CEILING DIFFUSERS



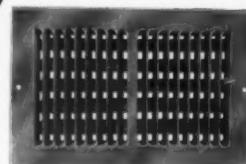
RETURN
AIR GRILLES



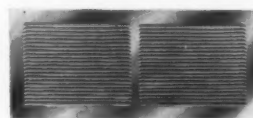
ADJUSTABLE
DEFLECTION REGISTERS



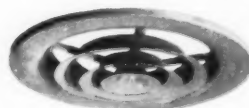
SQUARE
DIFFUSERS



MULTI-SHUTTER
WALL REGISTERS



RETURN
AIR GRILLES
FLEXIBLE FIN TYPE



ROUND
DIFFUSERS

When performance really counts, "Air Mate" engineered products, backed by engineering data, provide you the efficient answers to your heating and air conditioning problems.

A complete line of Registers, Grilles and Diffusers is available for every requirement.

* Write for free illustrated catalog with complete engineering section that is invaluable to help you to properly select, locate, and size return grilles and outlets for your installations.

DRY MANUFACTURING CO.
INCORPORATED

P. O. BOX 797 • WINTERS, TEXAS

JANITROL

*presents
the new and
versatile*

52 series

AIR-COOLED
AIR-CONDITIONER

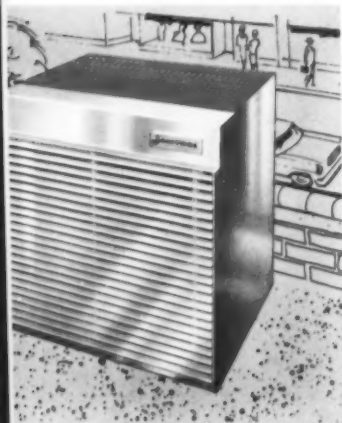


A PRACTICAL APPROACH TO ECONOMICAL,
HIGH EFFICIENCY COOLING FOR COMMERCIAL—
INDUSTRIAL BUILDINGS . . .

advance designed for the sixties

NEW JANITROL 52 SERIES AIR COOLED AIR CONDITIONERS

Outwardly beautiful and pleasing to the eye, inwardly rugged and powerful, new Janitrol 52 Series units combine years-ahead styling and cooling performance . . . provide truly low-cost central cooling with matchless reliability and performance.



JANITROL'S ADVANCED DESIGN . . . A SAFEGUARD AGAINST PRODUCT OBSOLESCENCE!

The weatherproof, high-efficiency 52 Series condensing unit, containing all moving refrigeration parts, installs outside. Available in six basic capacities from 22,200 to 110,200 btu/hr.



Full A.R.I. certification: Every Janitrol unit meets all standards of Air Conditioning and Refrigeration Institute.

STANDARDS OF EXCELLENCE . . .

In Performance—large condensing coils assure efficient operation with outdoor temperatures up to 125°F!

In Styling—crisp, modern lines distinguish the new 52 Series. Cabinets are finished in durable, automotive-type enamel.

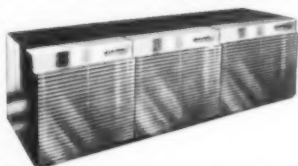
In Economy—The top-mounted fan bathes condensing coils in a jet stream of cooling air to raise efficiency and reduce current usage. Coils are shaded from the sun by louvers.

In Quietness—The powerful compressor is mounted on rubber-cushioned, resilient springs . . . cabinet is heated with special sound-deadening material.

In Safety—Complete overload and weather protection is provided. Enclosing grilles thoroughly safeguard children and pets.

In Servicing Ease—all components are easily accessible. Service panels can be removed without effecting operation during service checks.

MULTIPLE COMBINATIONS PROVIDE ECONOMICAL, HIGH CAPACITY COOLING



Modular cabinet design and upflow exhaust permit compact, multi-unit installations. Only the grilled, air-intake side of the cabinet requires clearance.

Any desired number of Janitrol 52 Series units may be installed together, with zero clearance between, to provide a variety of higher capacity combinations from 120,000 to over 1,000,000 btu/hr. Only Janitrol offers custom-built capacities at standard model cost!

JANITROL

year 'round conditioner

Combines quality gas heating and waterless cooling! Less than four sq. ft. of floor space needed for most installations. Features include famous Dura-Tube heat exchanger with 20-year warranty. Unique by-pass for correct air flow on heating or cooling cycle without adjustments. Powerful air-cooled 52 Series condensing unit. ADD-ON cooling—install for heating only, add cooling later.



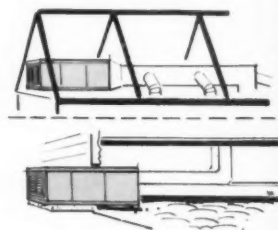
ADD-ON COOLING

Adapts most any warm air furnace for thrifty, efficient central cooling. Cooling coil mounts in duct, attractive, air-cooled 52 Series unit goes outside. Powerful, quiet performance with outside temperatures to 125°F. Easy to install.



"J-LINE" self-contained conditioners

An economical solution for many cooling needs. One compact unit contains blower, compressor and coils. For use with ducts or as free discharge. Install through wall in crawl space, attic or other limited access locations.



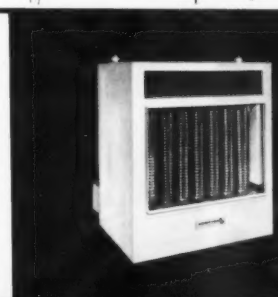
BLOWER-COIL UNITS

Smartly styled cabinet contains cooling coil and blower for use as free discharge or with ducts. Units are attached to ceiling to save floor space. Very quiet and efficient!



GAS-FIRED DUCT FURNACES

For installation in a duct where the air is circulated by a separate blower. Especially adaptable for industrial heating applications in combination with cooling. 73 Series in six sizes from 50,000 to 225,000 btu/hr. 72 Series in sizes 200,000 and 300,000 btu/hr. may be combined to provide unlimited capacity range.



JANITROL
HEATING AND AIR CONDITIONING
A DIVISION OF MIDLAND-ROSS CORP. • COLUMBUS 16, OHIO
IN CANADA: MOFFAT HEATING & AIR CONDITIONING DIVISION
MOFFAT LTD., TORONTO 13
1250 HARRIS OF SURFACE INDUSTRIAL FURNACES, KATHARIN HUNDT CONDITIONING,
JANITROL RESIDENTIAL HEATING AND COOLING DIVISION



HAROLD F. RANDOLPH, Pres.
International Heater Co.

MR. DEALER:

We'd like you to see for yourself how easy it is for you to get into the profitable summer air-conditioning business with International of Utica. With cooling now almost a must, over 90% of our wholesalers are now so staffed as to be able to say:

"We'll help you make that First Cooling Installation"

Yes, that's what they say! To help you get over the "hurdle" of that first installation, they'll send along a cooling specialist to show you the ropes.

This offer is being made for two reasons. First, so you can see how easy it is to *sell* International cooling equipment. And second, so you can learn how easy International is to *install*.

Thousands of dealers like yourself have discovered heating and cooling

are a natural profit combination. And the key to that combination is the company that produces the nation's most efficient, most salable line of heating and cooling equipment... International of Utica.

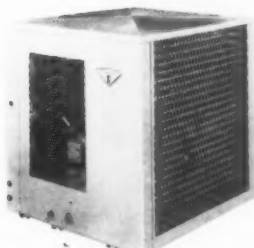
Don't put it off. Take that first step along the road to bigger and better all-year profits today. See your International distributor for complete details, or write International Heater Company, Utica, N. Y., Dept. A-2.

*Here's all you need
to start earning
C-O-O-L C-A-S-H!*

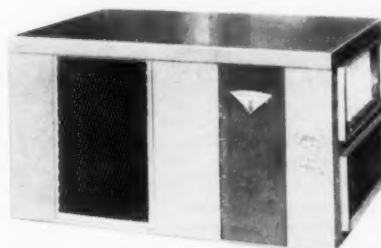
INTERNATIONAL'S
COMPRESSORS AND COILS . . .

OR

INTERNATIONAL'S
SELF-CONTAINED COOLING UNIT



The basics of any cooling system. Available in 2-, 3- or 5-ton capacities, to fit any residential or light commercial installation. Converts any size or make of warm-air system to year 'round air-conditioning!



Just hang it up and plug it in! This self-contained unit is all charged, wired and ready to roll. Delivers 2- or 3-tons of cooling even when it's as much as 110° outside. Fits handily into attics, crawl spaces, store transoms, etc.



More profits for you...

More customers too!

WITH THE NEW PERMANENT

Skuttle Dust-ban Filters



Skuttle Filter \$1.95
Gage



FREE filter gage

These new low-cost, permanent electrostatic filters are completely washable and never need oiling. Each is framed in zinc-coated steel for rugged, rust-resistant wear. The electrostatic action of the Skuttle Dust-ban Filters guarantees removal of dust, dirt, and pollen particles, but allows the free flow of air for maximum heating or cooling efficiency. A FREE Filter Gage to each customer purchasing 2 Dust-ban Filters or \$1 cost with 1 filter. 4 popular sizes, \$4.95 each.



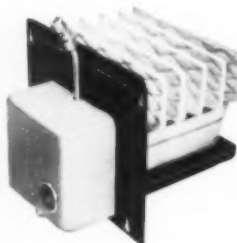
VAPOGLAS PLATES

SKUTTLE PATENTED VAPOGLAS PLATES. These plates are made of compressed pure glass wool. They are porous (taking up to as much as 70% more water per pound than ordinary filter plates) and resist clogging longer. Available in packages of 5.

MODEL 711 HUMIDIFIER

This highly efficient, counter-balanced low-priced unit requires one installation, one adjustment. It is shipped completely assembled with 5 Vapoglas plates, stainless steel plate rack and copper tubing. The Model 711 is compact, easily installed, trouble-free and is self compensating for all water pressures.

Write today for complete information and prices.



Skuttle

MANUFACTURING CO.
MILFORD, MICHIGAN

IN CANADA: WAIT-SKUTTLE CO., OAKVILLE, ONT.

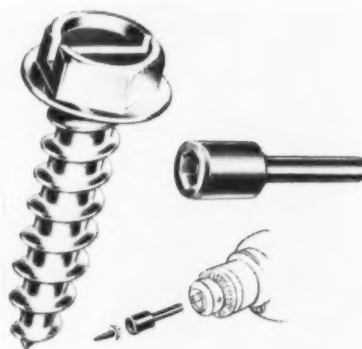
equipment developments

(Continued)

—Perfection Div., Hupp Corp., 1135 Ivanhoe Rd., Cleveland 10.

Sheet Metal Screw

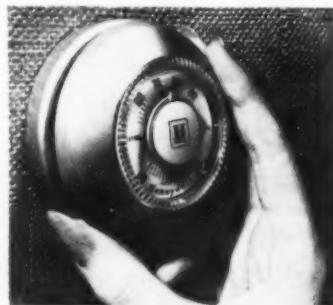
"SPEE-D" sheet metal screw "drills its own hole" and fastens in one operation. This new screw completely eliminates hole punching and drilling. It's made of



special heat-treated steel, with a slotted hex washer head and a sharp type "A" pinch point to assure starting. A special magnetized drive chuck is the key to the self-drilling operation—Air Control Products, Inc., 158 Center St., Coopersville, Mich.

Temperature Control Device

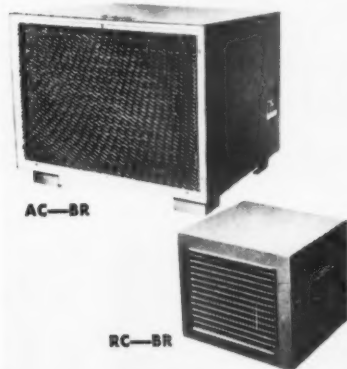
"PICTURE WINDOW" thermostat dial is 40 percent larger than the viewing dials on earlier models of this manufacturer, and size of the indicating numerals has been increased by 20 percent. In addition, the set



point scaleplate is located at the top of the thermostat, and the thermometer scale is at the bottom to facilitate dial reading. Plainly marked "comfort zone" allows the homeowner to check performance of his heating and air conditioning. New thermostat is called the Diamond Jubilee Round—Minneapolis-Honeywell Regulator Co., 2747 Fourth Ave., S., Minneapolis 8.

Product News

Here are several new developments in the field of scientific heating and air conditioning, including a heat pump unit that has just completed extensive field testing and development work.



American-Standard Split-System Heat Pump

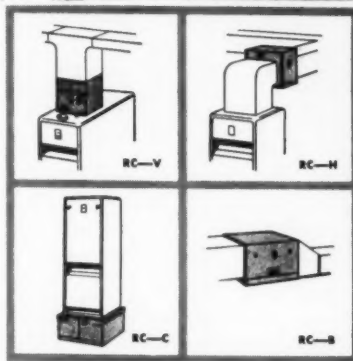
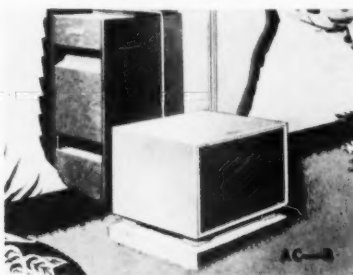
This Split-System Heat Pump consists of the AC-BR Outside Unit and the RC-BR Inside Unit, with its self-contained, high-capacity blower (mounted in the duct system). The Split-System Heat Pump is available in 3 and 5 H.P. models. A single automatic thermostat provides the desired temperature in both summer and winter, by means of an automatic gas-reversing valve in the heat pump. The unit has a de-icing system, which prevents ice build-up, and a condensate removal system.



American-Standard Package Heat Pump

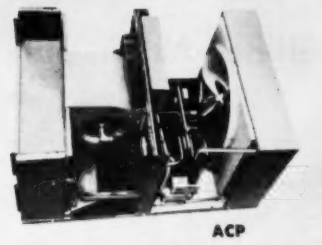
The ACPR Package Heat Pump is factory assembled and pre-wired, ready to install. Comes in 2, 3 and 4 H.P. sizes. It goes in an attic, crawl space, transom, or central hallway, to provide both heat and cool year-round. A single automatic thermostat provides the desired temperature in summer and winter, by means of an

automatic gas-reversing valve. A de-icing system prevents ice build-up, and a double drain pan saves work on installations (it also eliminates the cost of fabricating a secondary pan to meet FHA requirements). For cooler areas, a supplementary electric heater is available in four capacities — 13,600, 27,300, 41,000, 54,700 Btu — with step-by-step cut-in control of the elements to prevent overloading the power line. The heater is designed for matched installation with the ACPR Heat Pump, and is wired through the ACPR controls.



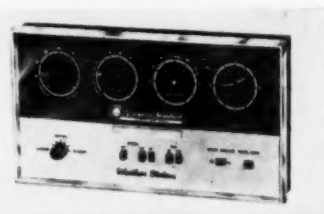
American-Standard Split-System Air Conditioner

This compact air conditioner consists of the AC-B Outdoor Condenser-Compressor, plus one of the four evaporator models illustrated. The AC-B Condensing Unit comes in 2, 3, 4 and 5 H.P. sizes, with matching evaporators for upflow, counter-flow or horizontal use. Controls are located where they are easy to get at; suction and liquid line valves are in front for quick servicing, the 4 and 5 H.P. units have two condenser fans for maximum cooling efficiency. The four models of the Evaporator cover a range of types and sizes for every kind of home and every furnace and ductwork design.



American-Standard Self-Contained Air Conditioner

Available in 2, 3 and 4 H.P. sizes, the ACP has been called the "most underpriced air conditioner ever made." Install it anywhere — through a basement wall, up in the attic, even outdoors on a roof. It features a powerful pull-through type condenser fan of high efficiency; a built-in double drain pan which eliminates the need for fabricating a secondary drain pan to meet FHA requirements; a durable baked-enamel automobile-type weather-resistant finish. Powerful single compressor in 2 and 3 H.P. units; twin compressors in 4 H.P. unit.



American-Standard Weather Station

The recently-introduced Weather Station control has been a big success right from the start with heating and air conditioning customers. It puts controls and weather instruments all in one visually dramatic package. The Weather Station is simple to install, mounts anywhere. Push buttons set the system for heating, cooling, or air circulation and filtration only. A clock-thermostat maintains temperature control, with automatic night set-back. And there's a warning light that signals when the furnace filter needs changing.

GET THE DATA SHEETS AND PRICE LISTS TODAY — YOUR AMERICAN-STANDARD AIR CONDITIONING DIVISION DISTRIBUTOR HAS THEM

American-Standard and Standard® are trademarks of American Radiator & Standard Sanitary Corporation



AMERICAN-Standard
AIR CONDITIONING DIVISION
Elyria, Ohio

THINK ABOUT THIS A MINUTE:

In the New York market

**where *price* is an
important factor**

**and rigid *building*
codes exist . . .**



**EMPIRE VENTILATORS
OUTSELL ALL OTHERS**

Sold thru leading wholesalers.
See your jobber.

EMPIRE

VENTILATION EQUIPMENT COMPANY

35-39 Vernon Boulevard
Long Island City 6, N.Y.

equipment developments

(Continued)

Oil-Fired Furnace

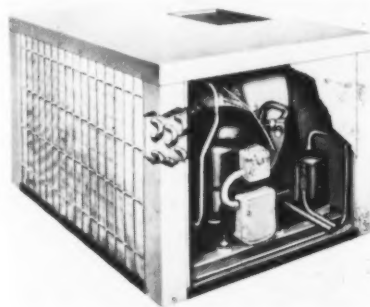
MODELS 70, 85 AND 100 COB are 60 or 66 in. high, 22 in. wide, 29 in. deep and are approved for zero clearances on sides and rear. Flue pipe diameter



is 5 in. The heating element is welded into seamless gas type unit. The blower motor is a centrifugal fan type. Welded steel base is of rigid construction, and the heavy gage steel cabinet is finished in baked enamel—Bonair Div., Peerless Products Co., 23rd & Sedgley Sts., Philadelphia.

Condensing Unit

TYPE 938 remote air-cooled condensing units in 3, 4, and 5 ton nominal sizes for installation with coil and cabinet or air handling units. Features large,

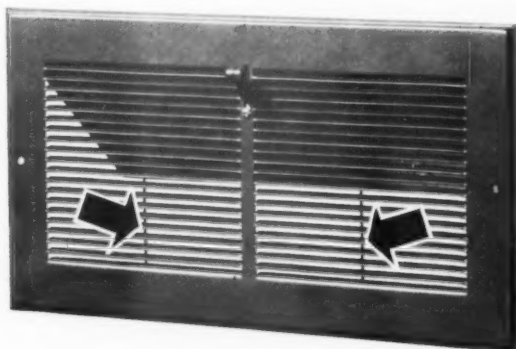


extra capacity centrifugal blower to insure quiet and dependable operation under any climatic condition, according to the manufacturer. All controls, other than thermostat, are located inside the condensing unit and all parts are easily accessible for installation and service. Units are weather-proofed against the elements for outdoor installation. All units are shipped assembled, pre-charged with refrigerant and pre-wired—Mueller Climatrol, 2005 W. Oklahoma Ave., Milwaukee 1, Wisc.



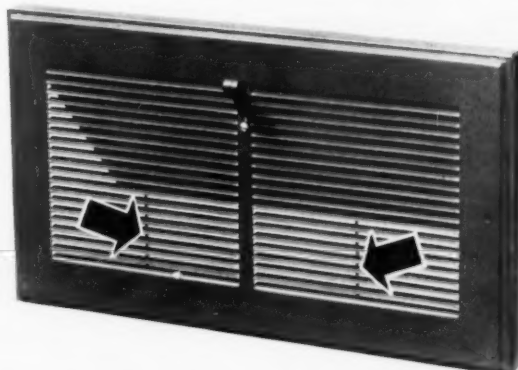
STOPS **HIGH VELOCITY** **NOISE PROBLEMS**

Gives You These NEW TIE-BAR DESIGNS
That END "HUMMING" and "STRUMMING"



New No. 153 A-C REGISTER

U.S. No. 153 Air Conditioning sidewall register has always been noted for its Neat Appearance, Efficient Air Distribution, and Low Cost. Now this "scoop-type" single-valve design has Grille Tie-bars that SUCCESSFULLY MUFFLE and END all HIGH-VELOCITY "hum."



New No. 165 A-C BASE REGISTER

Matches the Attractive, Neat design of the No. 153 in a register for Baseboard use. Has same Efficient "scoop-type" single-valve—with Grille Tie-bars to strengthen construction and ELIMINATE HIGH VELOCITY "HUM."

Plus This "Silent Wonder" for PERIMETER Diffusion



New U.S. No. 1000 BASE DIFFUSERS

New Extra Row of oblong openings add new FREE AREA, BEAUTY, and POWER to U.S. No. 1000 BASE DIFFUSERS. These are adaptable for 4", 5", 6", 7", and even 8", Round Supply Pipes. Combining

2 ft. and 4 ft. lengths with U.S. Connectors provides an easy way to make runs any lengths required for Desired Air Distribution and Diffusion.



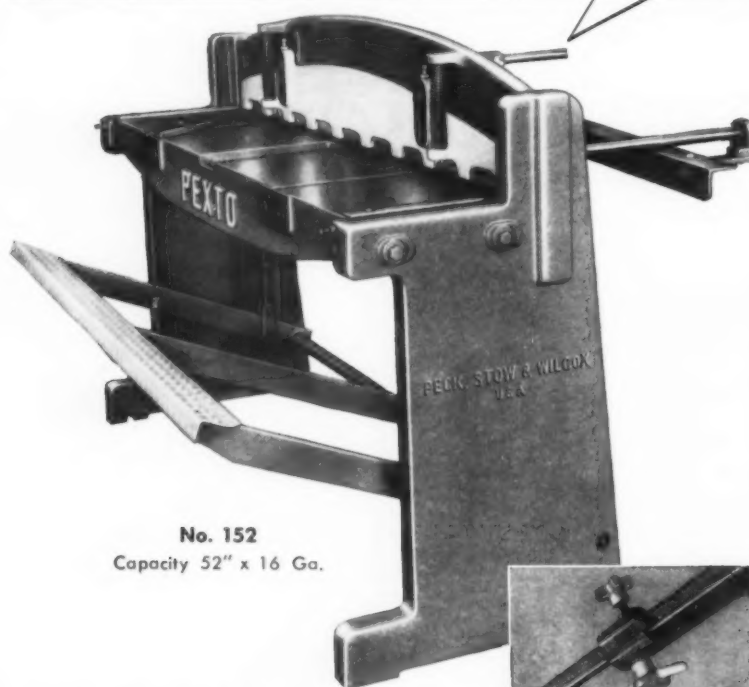
SEND FOR YOUR NEW 1960 CATALOG TODAY!



UNITED STATES REGISTER COMPANY

BATTLE CREEK, MICHIGAN
MINNEAPOLIS • KANSAS CITY • ALBANY

... especially for today's
FOUR FOOT SHEET STOCK!



No. 152
 Capacity 52" x 16 Ga.

PEXTO

This precision FOOT SQUARING SHEAR is outstanding for modern, fast cutting of squared blanks. Shears up to 16 gauge mild steel, copper, brass, aluminum, lead, zinc, plastics and many other materials. No. 152 is highly profitable for today's shearing of four-foot sheet stock. Safe, easy action, fully gauged, heavy machine-tool standard construction for maximum rigidity.



FREE BULLETIN

Bulletin No. 157 shows all models, features, specifications... tells the complete story of long life, low cost shearing. Write for your copy.



Adjustable back gauge-graduated



Bevel gauge, quick setting



Side gauge, graduated



Automatic holddown

THE PECK, STOW & WILCOX CO. Southington, Conn. U.S.A.
 A complete line of machines and tools for Sheet Metal Fabrication.

equipment developments

(Continued)

Hot Water Heater Control

"SPEED SET" control is designed to provide adjustable outlet rates of 2 to 5½ in. water column pressure, using city gas, on a water heater capable of satisfactory operation within these limits. The set knob has three markings designating recovery speeds, and intermediate settings also may be selected—Grayson Controls Div., Robertshaw-Fulton Controls Co., 100 W. Victoria St., Long Beach 5, Calif.

Print File System

MARTIN SHEET FILE SYSTEM allows the user to work with a large number of prints more efficiently and neatly because each sheet hangs flat, requiring less storage space and eliminates curling. Units are available in two sizes: Model 30 will hold up to 30 in. wide sheets, and Model 42 will hold sheets up to 42 in. wide—Lewbill Industries, Inc., Spring St., Scottsdale, Pa.



ing less storage space and eliminates curling. Units are available in two sizes: Model 30 will hold up to 30 in. wide sheets, and Model 42 will hold sheets up to 42 in. wide—Lewbill Industries, Inc., Spring St., Scottsdale, Pa.

Soot Remover

LIQUID SOOT-BAN is applied to the heat exchanger diffuser with a sprayer. The liquid adheres to the soot on vertical as well as horizontal surfaces and can be easily sprayed into areas that were formerly impossible to reach. It lowers the combustion point of the carbon to the point where it burns away rapidly, but not violently, when ignited with a paper torch—Parke-Hill Chemical Corp., Mount Vernon, N.Y.



CONTRACTORS . . .

CONNOR KEEPS YOU UNDER YOUR COST CEILING

*...for quality overhead with
no costly overhead... install*
KNO-DRAFT RESIDENTIAL AIR DIFFUSERS

LABOR-COST CONSCIOUS CONTRACTORS turn to Connor these days... for the substantial savings made possible by the quick, effortless installation of Kno-draft Residential Air Diffusers.

Kno-draft units smoothly slip into the uncrimped duct... mounting holes are marked and drilled... a few simple turns of the screwdriver, and the job's done! No time wasted with pre-assembly or separate installation of the diffuser's elements... no separate mounting ring or plaster ring required.

And in quality homes, such as the one shown here, the smart, simple styling of Connor diffusers blends perfectly with any well-appointed room.

From Connor... superior performance, smart styling, and matchless easy, low cost installation—a proven combination no contractor can afford *not* to use! Write for complete Kno-draft Diffuser data.

Kno-Draft Residential
Ceiling Air Diffusers.
Pre-engineered for
both heating and cooling



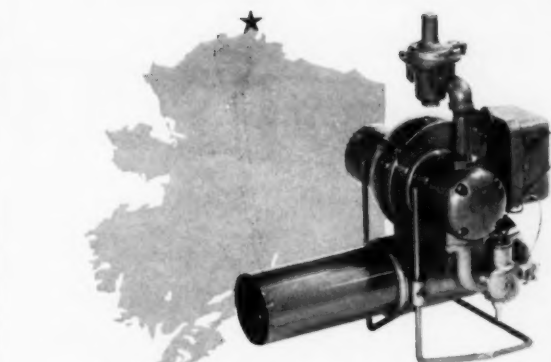
CONNOR... for Constant Comfort Conditions

CONNOR
ENGINEERING
CORPORATION

kno-draft®

DANBURY, CONNECTICUT

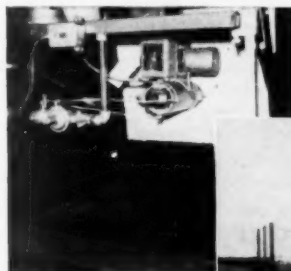
residential air diffusers



*In Barrow, Alaska,
U. S. Weather Bureau Selects*

LO-BLAST ECONOMITE

POWER GAS CONVERSION BURNERS



*Economite supplies heat for
cooking as well as comfort
on this converted range in
hospital kitchen.*



*Feeder line crossing
Nerrovik lagoon is
cable-suspended.*

Thirteen Economites and seven Dual Fuel Lo-BLAST Burners burn natural gas with trouble-free dependability to heat personnel housing, offices, warehouses, hospital, school and other buildings in the U.S. Weather Bureau Station, Barrow, Alaska.

Economite adds a bonus of *savings* over and above its dependability—averages 10% lower operating cost. Controlling primary and secondary air perfectly, it functions independently of variable natural drafts—is especially well-suited for down-draft boilers. Combustion is completed in an incandescent firebox, with radiant heat applied to crown sheet and side walls. Other features: soft, quiet-flame... standard controls with positive acting pilot and blower safetys... sturdy, fool-proof design... easy to install because completely assembled and factory-tested on gas.

Lo-BLAST Power Gas Burners are available in 70,000 to 20,000,000 B.T.U. input capacities. Write for literature.

(Use of this product by a U.S. Government Bureau in no way constitutes an endorsement of the product by the Government.)

**MID-CONTINENT
METAL PRODUCTS CO.**

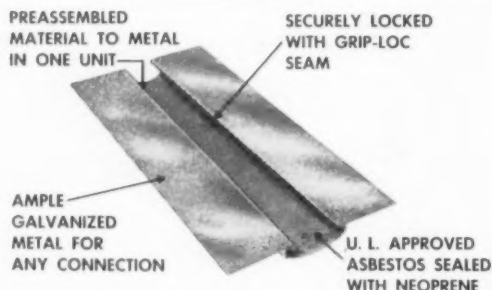
1960 N. Clybourn Ave., Chicago 14, Ill.

Another FIRST from...

DURO DYNE

Asbestoseal

**A NEW FLEXIBLE CONNECTOR
MATERIAL ALREADY ACCLAIMED
"The Ideal Connector for Furnace
Installations"**



ECONOMICAL

By combining all of the advantages of Canvas, Asbestos and Neoprene into one, ASBESTOSEAL offers greater economy in use.

HEAT-RESISTANT

Made of Underwriters Grade Asbestos, especially suitable for high temperature applications.

NON-POROUS

Sealed tight with fire-resistant Neoprene coating, withstands toxic fumes.

SECURELY LOCKED

ASBESTOSEAL combines Duro-Dyne's new Grip-Loc with the proven and tested Double-Loc seam and offers unsurpassed holding power.

CONTINUOUS COILS

Uncoils flat from its handy, bench-high dispenser carton ready to be marked, cut, notched or bent. Generous metal dimensions of ASBESTOSEAL enable the contractor to form any type of connection easily, quickly and profitably.

SEND FOR FREE SAMPLE NOW!

DURO DYNE CORP.

FARMINGDALE, NEW YORK
Manufacturers of

DRILL SCREWS—DAMPER REGULATORS AND QUADRANTS
— BLADE KITS — INSULATION ADHESIVE — PORTABLE
SPOT WELDERS

new literature...

Gas Venting

SIMPLIFIED THEORY of venting and principles of double-wall gas vent operation are presented in the bulletin "Proper Gas Venting." It is pointed out that proper gas venting should perform the following functions to insure safe and dependable operation of equipment: 1) Convey all of the hot combustion gases to the outside atmosphere; 2) Prevent overheating of nearby walls or framing; 3) Prevent condensation of moisture from the water vapor present in combustion gases; and 4) Provide fast priming of the vent to eliminate spillage of waste gases into the structure through draft hoods. Bulletin is illustrated throughout with diagrams to clarify explanations—*Gas Vent Institute, 332 S. Michigan Ave., Chicago 4.*

Power Roof Exhausters

FOUR BULLETINS cover 1) "Key Line" axial power roof exhausters; 2) "Key Line" centrifugal power roof exhausters; 3) "QT" sound control curbs for power exhausters; and 4) "Astro-Lite" and "Astro-Vent" skylights for homes, institutions, offices and industrial buildings. All bulletins are illustrated—*Jenn-Air Products Co., Inc., 1102 Stadium Dr., Indianapolis 7.*

High Velocity Duct and Fittings

BULLETIN gives specifications and physical properties of spiral lockseam duct and fittings for high velocity air handling systems—*United Sheet Metal Co., Inc., 540 S. Drexel Ave., Columbus 9, Ohio.*

Evaporative Coolers

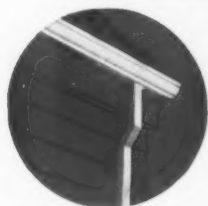
LITERATURE includes brochures, folders, envelope stuffers, etc., covering residential and commercial evaporative coolers. Also being offered are displays, banners and billboard material—*Utility Appliance Corp., 8111 W. Beverly Blvd., Los Angeles 48.*

Noise Control Products

LITERATURE gives data on "Mod-U-Size" silencers for air handling systems. According to the company, silencers can be built up in parallel or in series to meet any capacity and acoustics requirements. Also available is literature covering noise control products such as acoustic doors, machinery enclosures, and acoustic panels for fabrication of sound barriers—*Industrial Acoustics Co. Inc., 341 Jackson Ave., New York 54.*

FOLLANSBEE

Seamless TERNE



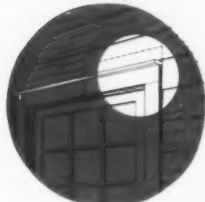
gutter and downspout



chimney flashings



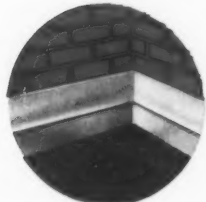
valley



window and door flashing



copings



flashings

the roofing metal you'll like working with . . . Follansbee Terne

Follansbee Terne, the oldest new roofing metal in use today, has characteristics which make it the most suitable metal you can work with in roofing and weathersealing work. The reasons for its superiority are simple. For example:

Follansbee Terne is easy to work

Terne is a very ductile metal, forms easily with both mechanical and hand tools.

Terne is easy to solder, its tin-lead alloy coating forms a perfect soldered joint.

Terne requires no special surface treatment or special primer and can be painted immediately.

Terne comes in eleven different widths, from 4" to 28". You'll save money by saving shearing time.

Terne requires fewer expansion joints, because it expands and contracts less than other roofing metals. Thus it can be installed in greater lengths before expansion joints are necessary. Installation costs are reduced.

Follansbee Terne Performs Better, Gives You a Better Job

Terne lasts a lifetime, a fact proved many times over. There are installations of Terne that have been in service well over 100 years—a record no other roofing metal can match!

Terne need not be painted as often, a fact that building owners will appreciate. Terne's coating is perfect for painting, makes an excellent bond with paint.

Terne can be painted any color, any time, an important advantage to color-conscious owners who want color in such things as gutters and downspouts and on the complete roof—and like the fact that color can be changed at will.

Terne expands and contracts less, and thus moves less with changes in temperature—joints and seams stay tight.

Follansbee Terne is a profitable line

Terne is competitively priced and offers an excellent profit to both the sheet metal distributor and contractor.

You'll like working with Follansbee Terne for many reasons—all of which make for a better, more profitable job for you.

FOLLANSBEE

STEEL CORPORATION

Follansbee, West Virginia • Sales Offices in Principal Cities

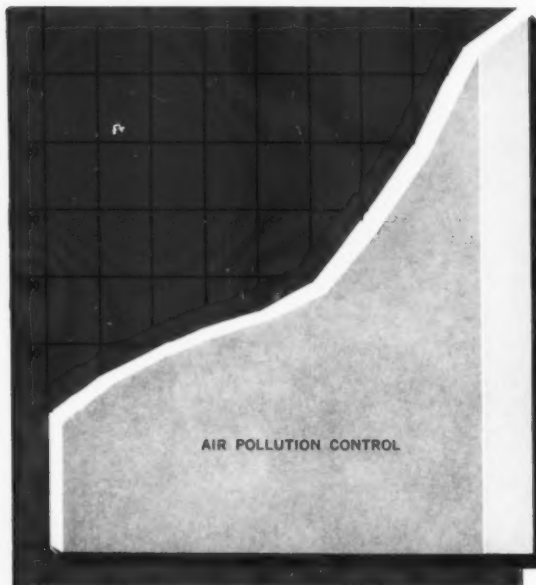
INSTALLATIONS OF RESIDENTIAL WARM AIR FURNACES
(IN THOUSANDS)



INSTALLATIONS OF CENTRAL RESIDENTIAL A/C SYSTEMS
(IN THOUSANDS)



NUMBER OF GOVERNMENT UNITS (STATE & LOCAL) THAT
HAVE AIR POLLUTION CONTROL LEGISLATION



Sources: Nat. Warm Air Heating & A. C. Ass'n.,
Air Conditioning Industry estimates; trade sources.

Are you ready for the Continuing Business Boom..

Warm air furnace shipments, in the decade 1950-59, increased 40%—far more than any other form of residential heating. Most estimates say 1960's total will reach 1,600,000—another boom year in *Better Air* for warm air dealer-contractors... *Every warm air furnace sale can mean an Electro-Klean sale, too—for double profit!*

Central residential air conditioning sales were 50,000 in the year 1950, then sharply increased each year until 150,000 home systems were installed in 1956; 1959 brought another upsurge, with an estimated total of over 210,000. One national air conditioning equipment maker

states: "By 1965, there will be easily *one million* central air conditioning systems sold annually for the home!"... *The family that buys central air conditioning will be certain to buy Electro-Klean, too—if you tell them how much more it gives, at little cost!*

Air pollution control is another indicator of America's growing demand for *Better Air!* Industry spends some \$300 million each year—and government units (state and local) spend vast additional sums for cleaner air... *All this growing demand for better air is in your favor—because it's what you sell!*

Double your profits... sell Electro-Klean with every warm air furnace or central A/C system

When bidding your jobs, give your customers an Alternate Proposal including an Electro-Klean electronic home air filter. It adds so much to home comfort and better living, and is so modest in cost. Point out to your customers other homes in your area now enjoying Electro-Klean's many advantages. *You'll build sales!*

Electro-Klean is proved—thousands are in use It is a product of AAF, oldest and largest manufacturer of electronic air filters. Guaranteed and backed by more than 35 years' experience in air filtration. It removes up to 90% of all airborne dust and pollen—cleanses air throughout all the home—assures cleaner, healthier living.

Priced low for volume sales Electro-Klean retails

for only *one-half* the price of comparable units. A size for the average 6-room home costs only \$189, plus installation. And you make a *full profit* on every sale... no competitive price-cutting.

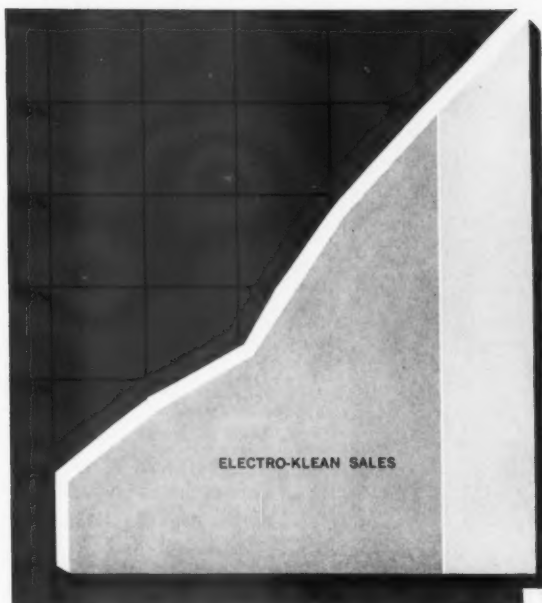
Proved Electro-Klean Selling Plan Contact your distributor, or write direct for facts about the complete Electro-Klean selling plan, including new "Alternate Proposal" forms for building Electro-Klean sales. Address: Mr. F. Robert Walker, Electro-Klean Sales Manager, American Air Filter Co., Inc.,



American Air Filter COMPANY, INC.,
215 Central Ave., Louisville 8, Ky.

Sell Better Air in the home..

ELECTRO-KLEAN SALES INCREASE 500% IN FOUR YEARS



1955 was the first full year of national sales effort on Electro-Klean. In the above graph 1955 represents an index of 100%.



AN ELECTRO-KLEAN OWNER WRITES:

"Electro-Klean makes my entire home a cleaner, more healthful place to live . . . keeps furniture, walls, draperies clean, bright and new-looking. House cleaning work is minimized . . . home cleaning bills are reduced. And my family is protected from airborne germs and pollen."

.in Better Air!

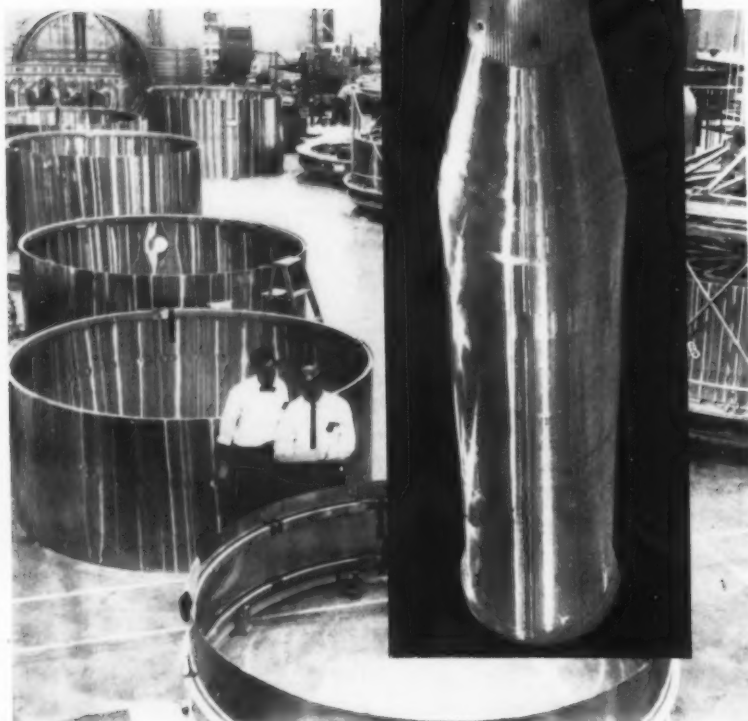


EASY INSTALLATION Electro-Klean is quickly installed on the return air duct of any forced air furnace or central air conditioning system. Requires no costly water or sewer connection, no special wiring circuit. Uses no more current than a 10-watt bulb. No moving parts—no after-service problems.



NEW 1960 ELECTRONIC HOME AIR FILTER

.....Sell *Electro-Klean*



"the life of an ATLAS tank section begins in the town of Washington, Pa.

... where the Washington Steel Corporation produces thin-gauge Stainless Steel in long, flexible bands about a yard wide.**

Washington Steel Corporation is the exclusive supplier of stainless skin for the ATLAS program for a very good reason: it has been able to meet the exacting specifications laid down for this specific undertaking.

Washington Steel Corporation is the pioneer in precision-rolling of light gauge stainless sheets by the Sendzimir process.

*ATLAS—The Story of a Missile
by John L. Chapman, ©1960



WASHINGTON STEEL CORPORATION
5-J WOODLAND AVENUE WASHINGTON, PA.

we hear that



J. David Hopkins

► DIRECTORS OF THE DELAVAN MFG. Co. recently elected J. David Hopkins vice president in charge of sales. Mr. Hopkins has been with the firm since January 1959 as general sales manager. Before that he was southwest regional manager for General Electric Co.

► AIR CONTROL PRODUCTS, INC. will now manufacture registers, grilles and diffusers at its new Leigh Industries plant located in Asheville, N. C. General offices, including sales, advertising and engineering, will remain at the company's plant in Coopersville, Mich. Orders will be processed and shipped out of the Leigh Industries plant.

► STANDARD METAL FABRICATING Co., Omaha, is now including in its mailings copies of a "Declaration of Independence from Federal Dependence," recently issued by the Fremont (Nebr.) Chamber of Commerce. The "declaration" states that members of the Fremont chamber are in agreement with the principles of "individual freedom, a free market, and limited government" and will "steadfastly resist further encroachment upon these principles by action of the federal government."

► MODERN MFG. Co., Willow Grove, Pa., has purchased the Super Slugger Co. of Bedford, O., and will manufacture the electric hammer formerly produced by Super Slugger.

If you can plan your **GUTTER DESIGN**
on paper . . . **WELTY-WAY CAN BUILD**
A MACHINE TO MAKE IT!



Imagine turning out nearly 3 feet of gutter per second while shrinking your overhead costs and boosting customer service. **WELTY-WAY** continuous gutter machines do! **WELTY-WAY** precision tailored units fit your individual needs. Regardless of your gutter design, **WELTY-WAY** accepts the challenge "to make the best."

WELTY-WAY reduces basic material costs while utilizing warehouse space, too. Save by buying galvanized iron, aluminum, copper or stainless steel in carload lots. Prepare and store gutter for use on a moment's notice. Takes up slack time and saves needed storage space. **WELTY-WAY** pays for itself in hours!

ONLY WELTY-WAY manufactures stationary (100'-150' per minute) **AND** portable continuous gutter machines. Practically any contour gutter possible with custom-made **WELTY-WAY** machines. Can make high back gutter, too. **STANDARD** machines make low back gutter. Machines which make high back gutter (1 1/2" to 3") also make low back gutter. Handles 4" (10" girth), 5" (12" girth) and 6" (15" girth).

WRITE TODAY:

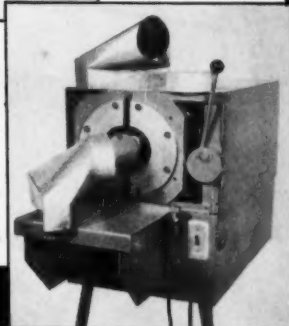
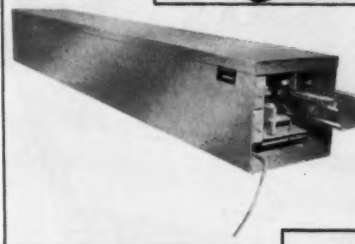
WELTY-WAY PRODUCTS, Inc.
714 FIRST AVE., N.W. CEDAR RAPIDS, IOWA

STANDARD AND DELUXE BOX TYPE MACHINES. CAPACITIES: 26, 28, 29, copper, stainless steel. **MAXIMUM SPEED:** Deluxe, 25 to 35 feet per minute, Standard, 15 feet per minute. **HEIGHT:** Deluxe, 14", Standard, 11 1/2", including motor, 22". **DRIVE:** 3/4 h.p. single phase, 110-120 V motor. **WIDTH:** 15 1/2". **WEIGHT:** 700 lbs. **LENGTH:** 8", including feed table.

STABILIZE COLLARS TO BOOTS AND FITTINGS. One man in **ONLY** one hour can attach 200 to 300 collars to boots or fittings . . . **without preforming.** The **WELTY-WAY COLLAR STABILIZER** attaches collars to many forms of boots and fittings from 4" to 8". Collar dies may be changed in nearly 10 minutes. No preliminary crimping or beading needed. 3 machines in 1 . . . (1) Expands boot or fitting, (2) grooves both collar and boot or fitting, (3) stabilizes collar to boot.



PORTABLE CONTINUOUS GUTTER MACHINES: Easily mount your machine on a 1/2 ton pick-up truck or two-wheel trailer. Make your gutter right on the job. Keeps men hanging gutter . . . no waiting. Time and labor eating trips back to the shop eliminated. Installation service available.

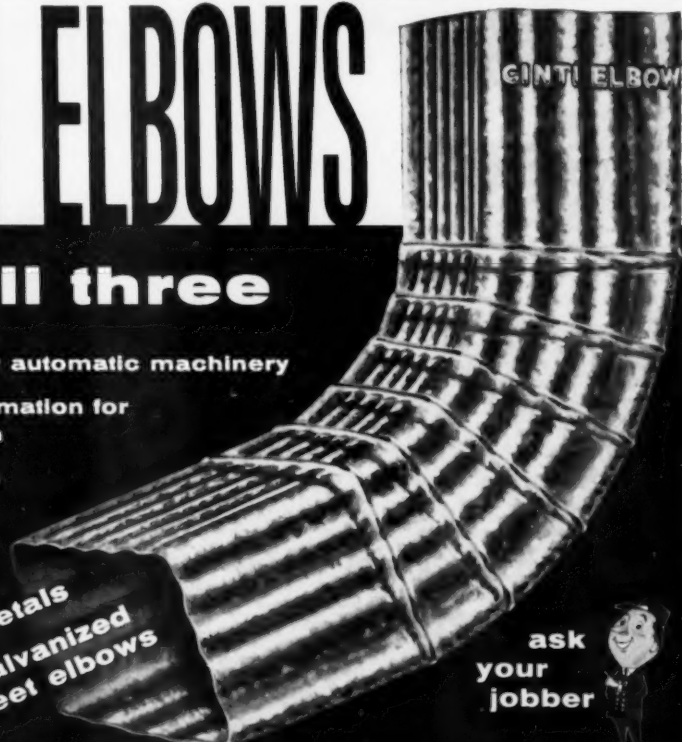


CINCINNATI ELBOWS

give you all three

- 1** Precision formation by fully automatic machinery
- 2** Hot dipped in zinc after formation for smooth rust-resistant finish
- 3** Shaped with tapered ends. Guaranteed to fit all standard size pipe

- all angles
- all sizes
- all metals
- also galvanized sheet elbows



ask
your
jobber

CINCINNATI ELBOW CO.

4730 MADISON ROAD
CINCINNATI 27, OHIO

New **LET THIS KIT
INTRODUCE YOU TO
"POP"[®]
RIVETS**

**Cut
fastening
time on
every job**

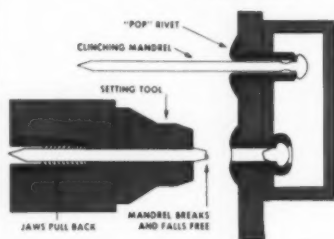
**\$19.95
ONLY PREPAID**

How would you like to cut your fastening time 50 to 90% on each job in your shop? Figure out what this means in extra profit in your pocket, and you'll agree that the cost of the "POP" Rivet Kit will be small by comparison.

With "POP" Rivets, you literally chop big chunks off the installation time you estimated. Savings through using "POP" Rivets on ducts, vents, cabinets, signs, housings, etc., will be like adding an extra fastening helper for every 2 men — without extra cost.

TRY these sensational new rivets now and you'll never go back to sheet metal screws, ordinary rivets, nuts and bolts, or even welding! "POP" Rivets are a tried and proven method of blind fastening which is far superior to anything you have used in the past.

Order your introductory Kit now and see for yourself what a tremendous difference in installation time "POP" Rivets can make. Kit contains a selection of rivets, setting pliers, instructions, and suggested uses.



How "POP" Rivets Work. They're installed and set from one side. A hollow rivet is pre-assembled on a solid headed mandrel which is used to set the rivet. Mandrel head is larger than end of rivet. When the head is pulled into the rivet with setting tool, the mandrel head clinches the rivet. Mandrel breaks near head under tension when rivet is set. Both hand and production power tools are available.

Don't delay. Order today. Discover the "POP" Rivet method that is helping thousands of firms like yours make more money on every fastening job.



NOTE: Kits will be shipped immediately from Shelton, Conn. or, wherever possible, from your local supplier.

"POP" RIVET DIVISION

United Shoe Machinery Corporation
715 River Road, Shelton, Conn.

Attached find ☐ check ☐ purchase order

for....."POP" RIVET Kits No. 100 @ \$19.95 prepaid.

NAME.....TITLE.....

AFFILIATION.....

STREET.....

CITY.....ZONE.....STATE.....

we hear that (Continued)

► CHRYSLER CORP'S AIRTEMP DIV. has established a nationwide network of 13 parts depots to sell replacement parts to its distributors and their dealer-contractors. Joseph B. Ogden, vice president of sales, said the policy change was made "in order to improve and economize parts delivery." Some of the advantages of the new depot plan, according to Mr. Ogden, are: 1) Faster delivery of parts to customers; 2) Lower freight rates, since the parts will be f.o.b. from the depot, not Dayton; 3) Lower investment for parts inventory by distributors and dealer-contractors; and 4) Depots can stock parts according to the actual sales requirements in their market. The depots will be located in Washington, D.C., Atlanta, New Orleans, Memphis, Detroit, Chicago, Kansas City, Phoenix, Dallas, Los Angeles, Dayton, and New York, which will have two depots.

The division is currently conducting a "Spring Slugfest" sales program. On opening day, according to Mr. Ogden, 17 district managers turned in orders totaling \$10,100,000. The division's previous sales record was set in 1959 on St. Patrick's day.

► GENERAL ELECTRIC CO.'S AIR CONDITIONING Department is currently conducting a "Bermuda Island Getaway" sales incentive contest for dealer-contractors. Winners, according to Joe Heffernan, manager of advertising and sales planning, will fly to Bermuda via chartered airliners. They will be guests at one of the island's resort hotels, will enjoy swimming, sailing, deep-sea fishing, skin-diving, or golf, and in the evening will visit world-famous night spots, all at the expense of General Electric. According to Mr. Heffernan, each distributor sets up a contest for his dealer-contractors, assigning each a contest quota. Those reaching the greatest percent of quota win all-expense trips for two.

PROOF

of PERFORMANCE DEPENDABILITY ECONOMY

More SONOAIRDUCT® America's original fibre duct—was sold in 1959 than ever before . . . once more proving its record for economical installation and dependable performance.



**SONOCO
SONOAIRDUCT®
FIBRE DUCT**

Especially designed for use in slab perimeter heating or combination heating-cooling systems, SONOAIRDUCT Fibre Duct maintains construction quality while saving on both initial and installation costs. Long, easy-handling lengths level quickly, have no sharp edges, and will not chip, crack, or break when dropped—every piece is useable.

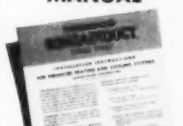
Available in 23 sizes, 2" to 36" I.D., in standard 18' shipping lengths — special sizes to order. Can be sawed. SONOAIRDUCT Fibre Duct meets or exceeds F.H.A. criteria and test requirements for products in this category.

See our catalog in Sweet's, or write for complete information and prices to:

- HARTSVILLE, S. C.
- LA PUENTE, CALIF.
- FREMONT, CALIF.
- MONTECLAIR, N. J.
- AKRON, INDIANA
- LONGVIEW, TEXAS
- ATLANTA, GA.
- BRANTFORD, ONT.
- MEXICO, D.F.

SONOCO
Construction Products
SONOCO PRODUCTS COMPANY 4493

FREE INSTALLATION MANUAL



Contains latest, detailed, step-by-step installation data for SONOAIRDUCT Fibre Duct. For copy, send us name, address on company letterhead.

TORIDHEET

Offers
BTU's
and
Profits,
Too!



Let Us Show You How To—
Sell Ahead of Competition with—

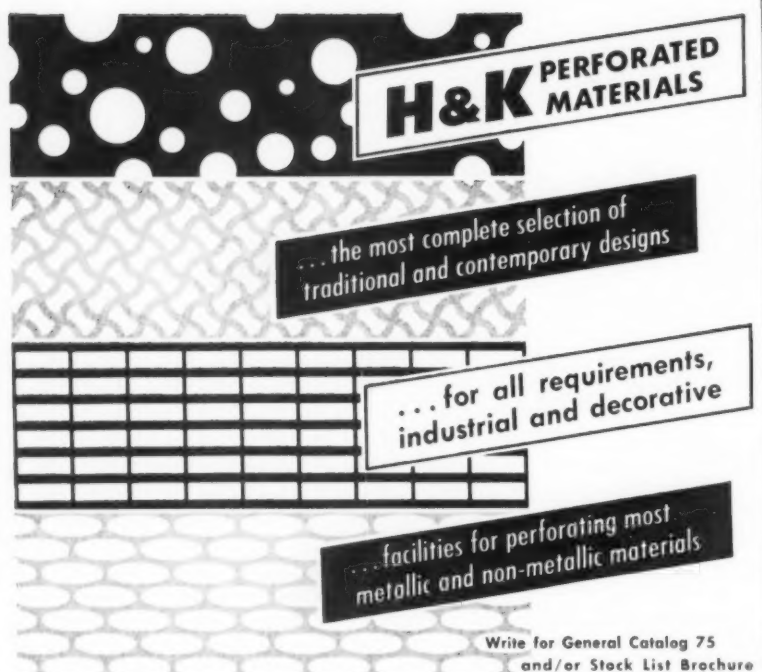
Proven Dynamic Sales Tools
Rugged, Hard-Hitting Co-op Advertising
Organized Sales and Installation Clinics
Factory Assembled and Wired Units
Industry Leaders for 37 Years
Time Tested Engineering and Styling

TORIDHEET Division Dept. A

Cleveland Steel Products Corporation
16025 Brookpark Road, Cleveland 35, Ohio

Please send me details about your dealer franchise arrangement and about your complete line of TORIDHEET Automatic Heating Equipment.

Name _____
Company _____
Address _____
City _____ Zone _____ State _____



H&K PERFORATED MATERIALS

... the most complete selection of traditional and contemporary designs

... for all requirements, industrial and decorative

... facilities for perforating most metallic and non-metallic materials

Write for General Catalog 75 and/or Stock List Brochure



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THE Harrington & King PERFORATING CO. INC.

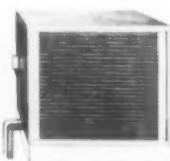
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BAR-BROOK®...the Quality Line For Year 'Round Comfort



VERTICAL CLOSET TYPES FOR HEATING-COOLING

Proved economy and whisper-quiet operation. Standard unit has cooling coils, heater, blower and filter, in slim good-looking, fully insulated cabinets. 3 models with heating input of 75,000, 100,000 or 125,000 BTU and cooling capacities of 3 tons and 5 tons. Also available without cooling coils but with space provided for later installation.



REMOTE AIR-COOLED CONDENSERS

Available in 4 models and 2 sizes, 36,000 and 60,000 BTU input. Extra-large quiet-tested fan. Tecumseh or Bendix-Westinghouse compressors. Cabinets for all models are the same size and finished in Sage Green Duracron backed acrylic enamel—the ultimate in corrosion protection even in salty-air coastal areas.



HORIZONTAL HEATER UNITS

Highly efficient gas heater-blower units compactly designed to fit small spaces. 4 models—60,000, 80,000, 100,000 and 120,000 BTU input. Safety tested and AGA approved. 10-year warranty.



Write for Catalog of entire BAR-BROOK Line

BAR-BROOK®
BAR-BROOK MANUFACTURING CO., INC.
6135 Linwood Avenue • P. O. Box 6638 • Shreveport, Louisiana

we hear that

(Continued)

▶ TWENTY-FIVE commercial market engineers and other key personnel from divisions of Lennox Industries Inc. met recently at company headquarters to discuss the firm's growing activities in the commercial heating, cooling and ventilating market. One of the chief topics was recently introduced gas and oil-fired roof mounted equipment, its design and application. Speakers included J. W. Norris, company president; Kenneth Behr, chief application engineer; and Norman Rutgers, market manager for "Comfort Curtain" schoolroom equipment.

▶ LOUIS PUTZE, president of Controls Co. of America, has been elected national treasurer of the Young Presidents' Organization. The Young Presidents' group is made up of individuals who become presidents of their companies before reaching the age of 40.

▶ J. WISS & SONS Co. recently gave a dinner for 95 employees, their wives and husbands. Richard R. Wiss, president, welcomed five newcomers into the Wiss 25-Year Club, and presented each with a gift to commemorate the occasion. The club members represent a total of 3296 years of service.

▶ A NEW FOUR-YEAR, pro-rated bonus has been added to the unconditional six-year full value guarantee on "Permaglas" economy model water heaters, according to Milo Miller, Mr. Miller, assistant vice president, Permaglas Div., A. O. Smith Corp., said that the new guarantee extension "will give Permaglas dealers a much stronger sales advantage."

▶ WAREHOUSE FACILITIES for flexible air duct have been opened on the west coast by The Wiremold Co. The new warehouse is located at 227 Bieghle St., Stockton, Calif.



GALVAN ELBOWS

They Fit!

ASK
YOUR
JOBBER

ALL STYLES
ALL SIZES

ALL METALS

Including

HOT DIPPED GALVANIZED
AND GALVANIZED SHEET

GALVAN

MANUFACTURING COMPANY
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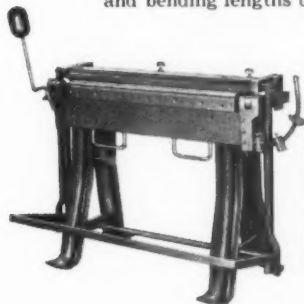


STANDARD BRAKES

Capacities up to 12-gauge sheet metal
and bending lengths up to 12 feet.

Hand Operated BENDING BRAKES

One Man Operation - Quick Adjustment - Rugged Construction



FOLDER BRAKES

The simplicity and ease of operation make this a desirable machine for light sheet metal work. Seams and locks can be made efficiently. Capacity up to 20-gauge in three sizes of bending lengths of 36, 42, and 48 inches. Foot treadle clamp.



PORTABLE BRAKES

Set up shop right on the job. Capacity 20-gauge sheet metal in two sizes with bending lengths of 49 and 61 inches.



Descriptive Literature on Request.

DREIS & KRUMP
MANUFACTURING COMPANY
7404 S. Loomis Boulevard, Chicago 36, Illinois

6695

Add a "HANDYMAN"
to your furnace
cleaning crew for
bigger profits!



The NEW, MODERN SPACE-SAVING
GENERAL HANDYMAN
POWERVAC FURNACE CLEANER

Check all these
"HANDYMAN"
exclusive features:

- SPACE-SAVING MODERN DESIGN
- ONE MAN OPERATION
- SELF CLEANING FILTER BAGS
- FAST ALL WEATHER OPERATION
- LOW MAINTENANCE
- 75 Cu. Ft. SOOT HOPPER
- CONVENIENT HOSE STORAGE
- 2 EASY-TO-REACH TOOL BOXES

Get your share of the profitable furnace cleaning business with a minimum investment that insures big returns. The General "HANDYMAN" Furnace Cleaner is built with more power (up to 40 H.P.) and greater capacity than any other cleaner available today. Now... All residential, commercial, institutional and industrial heating system cleaning jobs can be done with ease at a maximum profit.

Investigate all the features and advantages of the General "HANDYMAN" Powervac Furnace Cleaner before you buy furnace cleaning equipment for your shop. Send for our Profit Portfolio with complete information and prices on the "HANDYMAN" and other General Furnace Cleaners. Do it now... and start profits rolling your way from more cleaning jobs, more repair jobs and more replacement part sales for a profitable 1959.

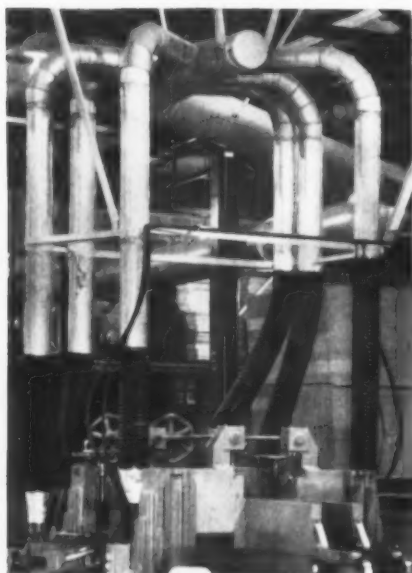
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Write Today
INdependence 3-5127



Wm. W. Meyer & Sons

8259 Elmwood Ave., Skokie, Illinois

YOU SAVE MORE WITH FLEXAUST® HOSE



Thousands of successful installations prove that use of Flexhaust hose and Portovent retractable duct with metal duct systems lower installation costs — but there are other important advantages

- Exceptional abrasion resistance
- Corrosion resistance
- Noise absorption
- Durability under heavy flexing
- Provision for expansion and contraction
- Easy relocation of hoods and machines

Made of high quality neoprene coated fabrics 1 1/4 to 36" i.d.

Write today for full details
Distributors in all principal cities

THE FLEXAUST CO.

DEPT. AA 100 PARK AVE.
NEW YORK 17, N. Y.

wholesaler doings...

▶ ABOUT 50 DEALER-CONTRACTORS in the Chicago area recently attended an "after 5" dinner given by the G. W. Berkheimer Co., Chicago, to find out "How to Sell Electro-Aire". Chief speaker was C. F. Frishkorn, president of Frishkorn Co., Aliquippa, Pa., who told the group how he is able to sell on the average of one electronic air cleaner a week to new and old home prospects.

Mr. Frishkorn explained the biggest selling point that stimulates prospect interest is better health, and second is cleanliness. His salesmen use a demonstrator provided by the manufacturer to illustrate these points.

"You can't sell 'em unless they are displayed in your showroom," said Mr. Frishkorn. "Drop-in trade, and prospects brought to the store by salesmen are able to see how the air cleaner will give them the benefits we claim it will."

Questions asked by the group were answered by Hank Dinsmore, Chicago office of Berkheimer Co., and Jim McGivern, Electro-Aire representative.



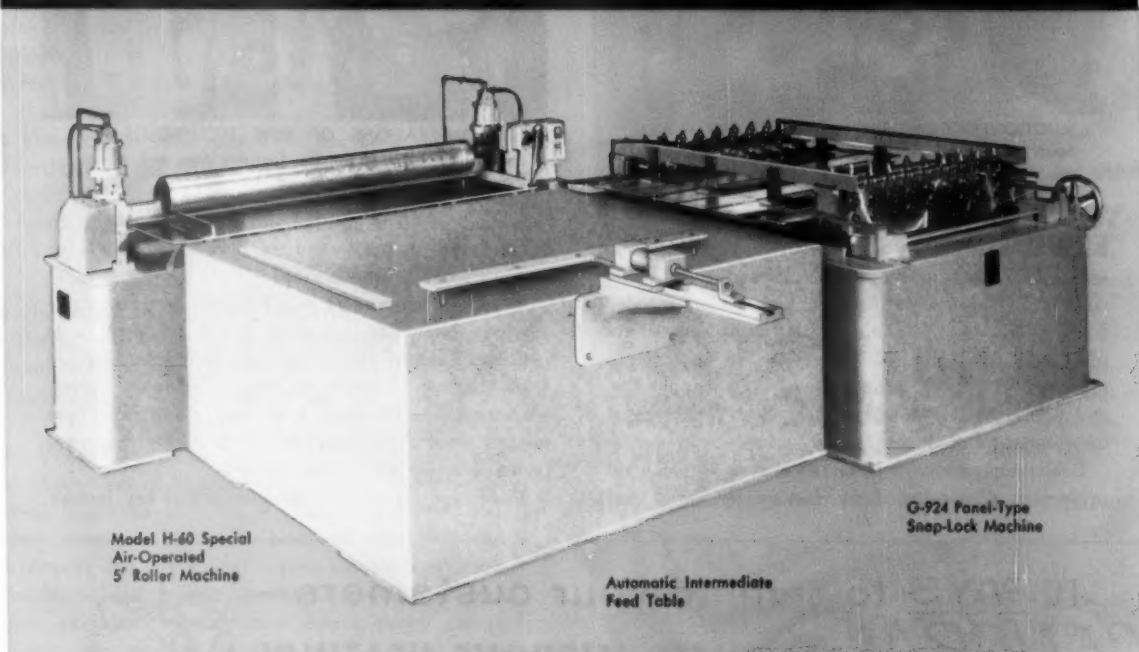
Gary L. Fisher

▶ GARY L. FISHER has been appointed a sales representative by Warm Air Products Co., Santa Ana, Calif., wholesaler. Mr. Fisher will cover the Orange county area. He has been with the firm for the past five years, has been employed in various capacities including layout of residential and commercial heating and air conditioning systems.

Pipe and Duct manufacturers:

CUT FABRICATING COSTS!

WITH **NEW MAPLEWOOD** **AUTOMATIC INTERMEDIATE FEED TABLE**



Model H-60 Special
Air-Operated
5' Roller Machine

Automatic Intermediate
Feed Table

G-924 Panel-Type
Snap-Lock Machine

Produce more pipe and duct sections per hour through less handling and automatic transfer of panels... Operate Snap-Lock and Roller Machines at maximum high speeds...

This new intermediate table automatically transfers panels from the snap-lock machine to the roller machine, and makes possible snap-lock forming, rolling, beading and crimping in one continuous high-speed automatic operation.

The G-924 Panel Snap-Lock Machine is now equipped with a micrometer dial-type upper-spindle adjustment

for more easily changing from one gauge to another. The roll shafts also have thrust bearings, assuring uniform sections at all times.

When combined as a single production unit, these three machines offer the finest production equipment for increasing output and cutting costs in the fabrication of pipe and duct sections.



DIVISION OF ROCKFORD MACHINE TOOL CO.
2500 KISHWAUKEE STREET ROCKFORD, ILL.

Call a Maplewood engineer for full details on the combination, and have him propose a plan for streamlining your operations with greatly reduced costs. No obligation, of course.

COMPLETE LINE OF ROLL FORMING, CUT-OFF MACHINERY

wholesaler doings

(Continued)



AUCTIONEER CONFIRMS A BID for a used welding torch set offered at annual tool and equipment auction held by E. E. Souther Iron Co., St. Louis wholesaler

► OVER 100 ST. LOUIS AREA warm air heating and air conditioning dealer-contractors and sheet metal contractors who desired to convert seldom needed hand tools, powered shop equipment or excess supplies into cash took advantage of the opportunity presented by E. E. Souther Iron Co.'s annual tool and equipment show and auction held in March at the company's plant.

Dealer-contractors wishing to see new tools and equipment demonstrated by factory personnel and

to view equipment to be auctioned attended the open house held on Wednesday, Thursday and Friday from 9:00 a.m. to 9:00 p.m. The auction was scheduled



DEMONSTRATIONS OF NEW TECHNIQUES and uses were featured at the four-day tool and equipment show that preceded annual auction

for Saturday morning and was handled by a professional auctioneer and his staff.

Tools and equipment sold by sheet metal contractors ran from hand snips to power operated press brakes. Products offered by dealer-contractors ranged from grilles to 10 ton cooling coils. Cost to the dealer-contractor was 20 percent of the top bid. This was used to cover the auctioneer's fee and other expenses incurred by the wholesaler.

More than 20 tool manufacturers had key factory

It PAYS to remind your customers — **GENERAL PRODUCTS IMPROVE HEATING!**

Let General products help keep your customers happy. You will be boosting your bank account when you do. Every heating plant needs General servicing at least once a year to maintain top-notch heating performance—its worth talking about—telling customers how important pre-season heating service is—with General, of course!



Ask your Jobber for these General Filters Products

GENERAL FILTERS, Inc.

43800 GRAND RIVER AVE.

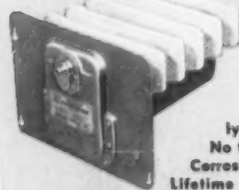
NOVI, MICH.



Replacing General Filter Humidifier plates and filter cartridges can mean big business for you.

IN CANADA:
Canadian General
Filters, Ltd.,
39 Crockford Blvd.,
Scarborough, Ont.

Generals Moisture-Matic HUMIDIFIER



Completely trouble-free.
No float to stick.
Corrosion free pan.
Lifetime diaphragm.

Guaranteed one year on parts.



General FILTER

Lifetime cast iron and steel construction. Wool felt cartridges. Two sizes fit all plants.

Generals CLEAN RIGHT

Soot Remover

Instantly cleans flues and fire chambers in any kind of heating plant. Will not damage nozzles or parts. Cuts heating bills up to 25%.



personnel on hand to demonstrate standard models and to explain the features and operating characteristics of new models.

Twenty-one other manufacturers of products used in the heating and air conditioning field had representatives on hand to explain applications and installation techniques.

► **FAMOUS FURNACE CO.** will handle distribution of Westinghouse heating and air conditioning products in Ohio, West Virginia, and Pennsylvania through its nine branches located in Cleveland, Lorain, Steubenville, Mansfield, Newark, Akron and Warren, Ohio; Wheeling, W. Va.; and Uniontown, Pa.

► **FURNACE DISTRIBUTORS, INC.**, has been appointed distributor in the Philadelphia area by Typhoon Air Conditioning Div., Hupp Corp. Furnace Distributors, located at 1317 N. Broad St., is headed by William Gleason.

► **HAMADA REFRIGERATION SALES CO.**, Honolulu distributor, will handle sales of "Heatwave" air conditioning equipment in Hawaii for Southwest Mfg. Co., a subsidiary of F. E. Myers & Bro. Co.

► **VORYS BROTHERS, INC.** recently held a tool and machine show at its plant in Columbus, Ohio. Equipment displayed included a continuous button lock duct former, an automatic boot and collar machine, hydraulic and mechanical brakes, automatic notching machines, and mobile continuous gutter machines. Also exhibited were contour shears, power shears, power rolls, punches, notchers, etc. Numerous action exhibits showed machines and tools in actual operation. Educational activities included a seminar on equipment upkeep and a problem-solving clinic.

► **AIR CONDITIONING, INC.**, Salt Lake City, will distribute air conditioning products manufactured by Chrysler Corp.'s Airtemp Div. in western Utah and northeastern Nevada. The Salt Lake City firm is headed by Earl E. Olson, formerly a dealer-contractor handling Airtemp products.

► **EDWARD HUDAK** has joined Girard Steel Supply Co., St. Paul, as a sales engineer. Mr. Hudak will call on production and specialty sheet metal shops as well as heating dealer-contractors in Minneapolis, North Dakota and northwestern Minnesota.

► **SID HARVEY, INC.** has opened a new facility located at 7147 W. Belmont Ave., Chicago. The new operation, headed by Dave Myers, will serve the Midwest. Mr. Myers has been with Sid Harvey for 13 years, serving most recently as manager of the gas department at the firm's plant in Valley Stream, N. Y.



TYPE AL furnace limit control

Adjustable and non-adjustable. Bimetal sensing element is maintained in a completely exposed position in the air stream for fast temperature response. Temperature calibration and differential can be preset to your specifications up to 300° F. Standard factory differential is 25° F. Can be supplied with a closer or wider differential on request. Adjustable feature at no extra cost. Standard range of adjustment is 90° F. 40° F. range also available. Furnished with either 3-inch (AL-3) or 7-inch (AL-7) probe.

NEW THERM-O-DISC THERMOSTATS

for furnace fan and limit control applications



TYPE AF furnace fan control

Available with either a 3-inch (AF-3) or 7-inch (AF-7) probe which maintains the bimetal sensing element in a completely exposed position in the air stream. This rapid response position of the sensing element, combined with a snap-acting switch mechanism, provides fast and efficient furnace fan control. Adjustable with a range of 90° F. Maximum temperature 300° F. Factory differential is 25° F. Can be supplied with a closer or wider differential on request.

for
additional
information
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Therm-O-Disc

THERM-O-DISC, INCORPORATED mansfield, ohio

FOR THE EASIEST
WAY TO VENT GAS
FIRED HEATING EQUIPMENT
AND WATER HEATERS

THOR

presents
**A NEW ADDITION
TO THE FAMILY**

**DOUBLE WALL
SAFETY-VENT
& FITTINGS**



EXCLUSIVE WITH THOR
"VISUAL LOCKING CLIPS"

—PROMPT DELIVERY—
FINEST WORKMANSHIP TO
SAVE YOU TIME AND MONEY

AREAS NOW OPEN FOR
DISTRIBUTORS

THOR METAL PRODUCTS CO. INC.

EAST MOLLOY ROAD, P. O. BOX 218
EASTWOOD STATION, SYRACUSE, NEW YORK

merchandising ideas

► "FORECAST IS FOR HOT AND HUMID weather this summer," radio listeners were told in a recently concluded series of broadcasts sponsored by Minneapolis-Honeywell Regulator Co. Long range forecasts were presented over the 200-station NBC "Monitor" network in three five-minute broadcasts each Sunday during the month of April. Listeners were urged to start making plans immediately to "beat the heat" by installing central air conditioning equipment in their homes.

To make the long range forecasts, the company retained the services of Irving P. Krick Associates, Inc., a private weather forecasting organization. In general, the Krick service predicted numerous heat waves for the eastern part of the United States and "a real hot one" throughout the west.

Detailed summer weather forecasts (for example, July is expected to be much hotter throughout the country's midsection than was the case in 1959) were combined with strong selling messages on the benefits of year 'round air conditioning.

Free tie-in kits were available to dealer-contractors to help them conduct local promotions.

From August 21 to September 25, the Krick service will supply winter forecasts which will be broadcast throughout the NBC network. This promotion will urge homeowners to have their heating systems checked and modernized in advance of cold weather. As with the summer air conditioning promotion, tie-in kits will be provided for the use of dealer-contractors participating in the program.

► A SIX-PAGE CLIPSHEET prepared by the Air-Conditioning and Refrigeration Institute can be used by dealer-contractors to obtain publicity at the local level. The clipsheet contains articles of varying lengths covering the benefits of air conditioning, selection of units, and types and kinds of units available. The institute is currently mailing the publication to daily papers with circulations of 25,000 and over, as well as to consumer periodicals. The dealer-contractor can clip appropriate items and mail them to local newspapers, together with a letter explaining that he recommends the practices and suggestions outlined.

► OWENS-CORNING FIBERGLAS CORP. is completing distribution of its 1960 spring filter promotional material to its heating and air conditioning dealer-contractors and wholesalers. Focal point of the promotion is the introduction of new "U-Trim-It" air conditioner filter, now available in a spring green color and containing hexachlorophene which is said to give added protection against airborne bacteria.

Sales aids designed to help build the dealer-contractor's service business also are available from the company.

Architect: SWANSON ASSOCIATES, INC., Bloomfield Hills, Mich. General Cont.: DARIN & ARMSTRONG, INC., Detroit. Sheet Metal Cont.: J. D. CANDLER ROOFING CO., Detroit. Plumbing, Heating & Ventilating Cont.: PAGE PLUMBING & HEATING CO., River Rouge, Mich. 14,500 lbs. of Revere 16 oz. and 32 oz. Sheet Copper for this installation were supplied by COPPER AND BRASS SALES, INC., Detroit.



REVERE SHEET COPPER plays dual role in

WOODROW WILSON JUNIOR HIGH SCHOOL Wyandotte, Mich.

Because of the dampness that was bound to occur over the swimming pool area, the architect specified non-rusting Revere Sheet Copper for the warm air ducts in this \$2,780,606.13 high school. In addition to its enduring qualities sheet copper is readily soldered and formed into any desired shape.

And, for combined thru-wall and cap flashing, the architect specified Revere Keystone® 2-piece Copper Cap Flashing for these reasons:

FREE WALL—It provides the roofer with an unobstructed wall face for the placement of the base flashing. Receiver is laid in during construction of wall, while the insert is snapped in only after all roof and base flashing work is finished.

PERFECT WEATHER-SEAL—Factory-formed angles on the receiver and insert cause latter to hug the base flashing, weather-seal effectively.

NON-LEAKING DAMLOCK—Requires no soldering except for special conditions.

CAN BE DISASSEMBLED—Insert can be removed with a simple tool and used again, with no loss of neatness or snugness, when the built-up base flashing or roofing has to be repaired.

*Patent No. 2,641,203 Other Pats. Pending

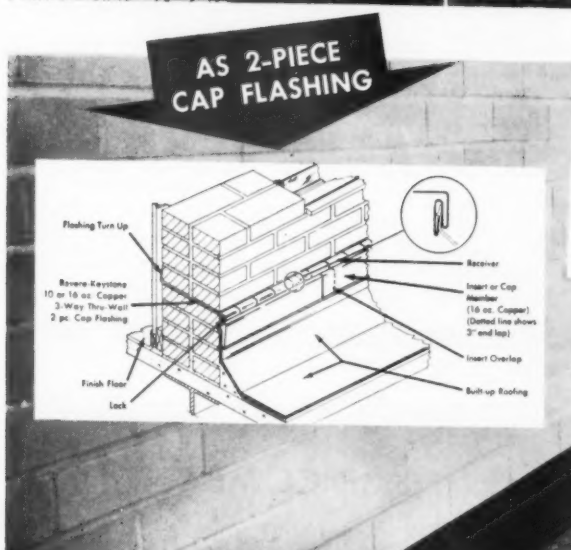
REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue,
New York 17, N. Y.



Mills: Rome, N. Y.; Baltimore, Md.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb. Sales Offices in Principal Cities, Distributors Everywhere.



INSET DIAGRAM SHOWS detail of Revere-Keystone 2-Piece Cap Flashing with combination receiver and Thru-Wall Flashing. Receiver is furnished in 49" lengths (48" layup), with 1" interlocking tongue which assures proper alignment. Photo shows standard 4" flat copper receiver with 1/4" hook dam.

appointments . . .

► **THOMAS E. O'NEAL** as president of Follansbee Metals Corp. of New York. He has also been elected to the board of directors and will serve on the executive committee. Mr. O'Neal was previously assistant to the president and a vice president of the firm, and before that was manager of the steel service center at Rochester, N. Y.



Thomas E. O'Neal



Kenneth O. Schultz

► **KENNETH O. SCHULTZ** as sales manager of the dehumidifier and central air conditioner departments of Heat Controller, Inc. In his new position, he will direct the merchandising of "Comfort-Aire" electric dehumidifiers, central air conditioning equipment and heat pumps. He will operate from the company's

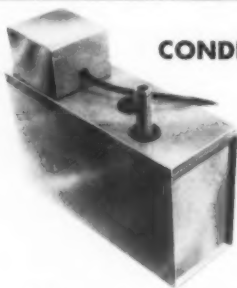
home office at Jackson, Mich. Before joining Heat Controller, he was associated with Revco, Inc.

► **T. C. McKEE** as manager of sales service for Detroit Controls Div. of American-Standard. In this capacity he will supervise policy, customer service, service training, contracts and factory warehouses at Stratford, Conn.; Cleveland; and Melrose Park, Ill. He will also have jurisdiction over service agencies and replacement depots. He was formerly manager of the division's west coast region.

► **MAURICE MERLIN** as regional manager in charge of unit heater sales in the northeastern territory for Carrier Corp. He will have headquarters in Philadelphia. James P. McLaughlin will be responsible for unit heater sales in the southern and southwestern territories and will operate from headquarters in Atlanta. Oliver M. Murphy will direct sales in the east central region from offices in Cleveland.

► **HARRY P. YOUNG** as manager of sales planning, residential products, for the Airtemp Div., Chrysler Corp. Mr. Young has been with the company since 1947, has served as a field sales representative, regional manager, field engineer, zone manager, sales engineer and field district manager.

There's a LITTLE GIANT PUMP for most Liquid Handling Jobs



CONDENSATE UNITS

Compact Little Giant condensate unit is the most economical on the market. Superior design and quality make it most preferred

by air conditioning manufacturers and distributors. Little Giant pump is trouble-free . . . never needs lubrication. Available in shallow pan model for ceiling mounted units.

- Motor runs in bath of oil, never needs lubrication
- Operates when completely under water
- U/L approved glass insulated terminals
- Die-cast aluminum case with baked-on plastic coating

BASEMENT BAILER



For house use is the new Little Giant "Basement Bailer". Safe and economical to operate, the pump box and pump in the Bailer are

screened to keep foreign matter from hampering pump's operation. Can be used in basement, under house, or anywhere seepage occurs.

For complete specifications, contact:



Little Giant PUMP COMPANY

P. O. BOX 7025 • OKLAHOMA CITY, OKLA.

when You STOCK the
complete *Auto flo* line...

Sales Zoom

THE FABULOUS

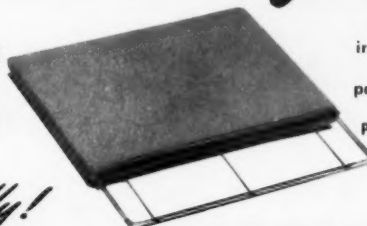
NEW PERMANENT—WASHABLE

AIR FILTER



zip off... washes in a jiffy!

BUILT-IN GERM KILLING POWER



Easy to handle. No irritating glass or metal particles. Made of miracle Polyurathane.

Washes like a towel... never needs oiling. Exclusive double-wall design.

FAMOUS '150' HUMIDIFIER

The "150" requires NO SERVICING other than occasional cleaning because there are no moving parts to adjust, stick or wear out. Fits all furnaces, every type of bonnet, simple to install. Comes complete with plates and fittings.

FURNACE POWER HUMIDIFIER

Efficient high capacity unit adds humidity in pure vapor form to even largest homes. When furnace blower comes on, humidifier fan and recirculating pump go to work! 110 volt A.C., no drain connections, no drain problems. Humidistat package available.

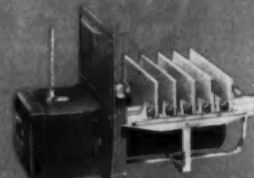
PORTABLE POWER HUMIDIFIER

Handsome portable distributes humidity in pure vapor form. High capacity 110 volt A.C. unit has simple pushbutton controls. Built-in humidistat. Humidifies even the largest homes. Attractive cabinet blends with any decor.

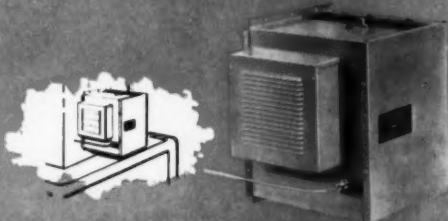
low
cost

FAIRWAY HUMIDIFIER

Best low-cost humidifier on the market today. First in simplicity, efficiency, economy. One model fits all furnaces, comes complete with 5 evaporator plates and all fittings.



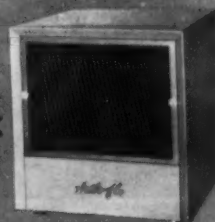
World's fastest selling unit



extra performance for small or large homes



High capacity when and where you need it



Expertly engineered for trouble-free performance

Auto flo

CORPORATION

Detroit 39, Michigan

IN CANADA: 1305 Windsor — Windsor, Ontario

FUEL OIL FILTERS

Standard and King size. Finest cartridge available.



EVAPORATOR PLATES

Unbreakable, last longer. Universal size.

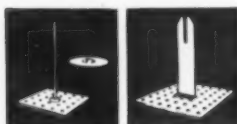


INSULATION INSTALLED FAST



WITH MIRACLE SURFACE ANCHORS

No faster, surer, safer way to install insulation on the interior and exterior of metal ducts.



Use Spindle Anchors for bonding heavy glass batts, mineral wool to ducts, walls, ceilings. Lock weather holds insulation firmly in place.

Use Pronged Anchors for bonding block insulation, such as cellular glass. Pronged Anchors are set between rows of blocks and then grout is bent over.

FREE

Send today for Mira Data Sheet #2, 4 page two color brochure which completely describes this application.

MIRACLE SURFACE ANCHORS
are manufactured by
DEVICES - Division of
MIRACLE ADHESIVES
CORP.
250 Pettit Avenue
Bellmore, Long Island, New York

JUST AMAZING!
THE TIME AND COST SAVINGS
ACHIEVED WITH
MIRACLE SURFACE ANCHORS
AND MIRACLE ADHESIVES



appointments

(Continued)

► **R. JOHNSON** as vice president and general sales manager of Dreis & Krump Mfg. Co. Mr. Johnson has been with the company for eight years, was formerly sales manager of the tooling division.



R. Johnson



Michael J. Merfeld

► **MICHAEL J. MERFELD** as assistant sales manager for Century Engineering Corp.'s heating and air conditioning division. Mr. Merfeld joined the company in 1948 as a project engineer. At the time of his recent promotion he was district sales manager in the midwestern area. George G. Wolfe Sales Associates, Glen Ridge, N.J., has been named manufacturer's representative covering New York, New Jersey and Pennsylvania. Everett W. Johnson, Fort Dodge, Iowa, will serve as manufacturer's representative in Nebraska and part of Iowa.

► **ROBERT WENKE** as regional manager, distributor sales, for Mueller Climatrol Div. of Worthington Corp. He was previously a sales engineer in the Milwaukee district. Donald W. Irwin has been appointed a sales representative for the Michigan area. Before joining Mueller Climatrol, Mr. Irwin was regional sales manager in Michigan for Briggs Mfg. Co.

► **W. GENE DART** as merchandise manager for residential heating and air conditioning products for the York Div., Borg-Warner Corp. Mr. Dart, with the division since 1950, was senior product design engineer until his recent promotion.

► **LEE W. RASCH** as sales manager of Consolidated Industries Corp. Before joining Consolidated, Mr. Rasch was associated with Temco, Inc., and before that was a sales executive for Security Mfg. Co.

► **FRANK G. COON** as St. Louis district sales manager for Welbilt Air Conditioning and Heating Corp. Mr. Coon's territory includes Missouri, Kansas, Iowa and parts of Illinois and Kentucky. Before his recent appointment, he was owner of a heating equipment distributorship in St. Louis. Milton Levine has been named district sales manager in metropolitan New

If you're a **heads-up**, both-feet-on-the-ground kind of man who knows his way around in business — you're sold on your businesspaper. You know from profitable experience, there's nothing else in print so packed with facts, news, and good ideas that help you stay on top in business as the advertising and editorial pages of . . . your businesspaper.



PHOTO ON LOCATION BY EHRENBURG

Where there's business action, there's a businesspaper . . . where there's central residential air conditioning, warm air heating, sheet metal contracting business, there's American Artisan.



One of a series of advertisements prepared by the ASSOCIATED BUSINESS PUBLICATIONS

AMERICAN ARTISAN, MAY 1960

YORK HEAT BOILERS

Equipped with special, factory-tested controls and improved heat-exchangers, covered by a 10-year guarantee, York-Heat Boilers provide quiet, dependable performance and lowest possible maintenance. These gas and oil-fired boilers also feature extra-large copper coils for an abundance of hot faucet water. Now available from 100,000 to 468,000 Btuh. Small sizes packaged.

YORK HEAT FURNACES

These units are known nation-wide for their top efficiency and economy. Multiple flue passages, special baffles and fluted-surface heat exchangers provide maximum heat transfer. Blowers are oversized and rubber mounted for smooth, quiet operation, with extra capacity for heating and cooling. Compact, decorative cabinets styled to meet today's smart appliance trend. Capacities from 81,000 to 205,000 Btuh, oil or gas-fired.

Limited number of protected territories still available. Write for full details today!

YORK- SHIPLEY, inc.

Pioneer and Specialists in Automatic Heat

YORK, PENNSYLVANIA

Furnaces to 4,750,000 Btuh

Boilers to 600 Hp . . .



BIG TWIN
250 AC/DC



LITTLE TWIN
180 AC/DC

AND BOTH MILLERS ... Through and Through

BIG TWIN combination ac-dc welders work from single phase service — deliver new convenience and economy. Two a-c amperage ranges of 20-125 and 60-290 plus two d-c ranges of 18-100 and 65-290 amps master nearly every welding requirement from light gauge metal to structural pieces. Movable shunt type transformer affords infinite current adjustments. Other features include: Horizontal design for easy stacking; weather-resistant construction and Class B insulation; Miller-built semi-metallic rectifier for best d-c welding; high open circuit voltages and new weld stabilizer. This is THE all-time, all-around welder!

LITTLE TWIN ac-dc combination welder has two a-c amperage ranges of 20-115 and 60-180 plus one d-c range of 40-150. Operating from single phase service, this Miller model incorporates many design and construction features usually found only in large industrial types. These include really rugged construction, forced air cooling, new Miller semi-metallic rectifier, movable shunt type current control, new weld stabilizer and open circuit voltage in abundance. Power factor correction is available on both models. Complete specifications on either model will be sent promptly upon request.

miller

ELECTRIC MANUFACTURING COMPANY, INC., APPLETON, WISCONSIN

Distributed in Canada by Canadian Liquid Air Co., Ltd., Montreal

Roberts-Gordon Inshot Gas Burners Feature TELESCOPING MIXER!

NEW

- Now you can guarantee peak combustion efficiency with minimum installation cost.

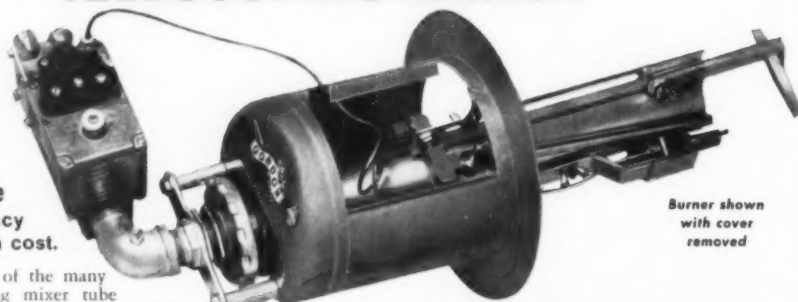
Simplified installation is only *one* of the many advantages of the new telescoping mixer tube offered with the Roberts-Gordon Atmospheric Type 400-R Series and Blower Type 450-P Series Gas Conversion Burners. Now these highly efficient Inshot Burners can be quickly and easily installed because of the adjustability of the mixer tubes. This reduces installation cost. Further customer savings result from increased combustion efficiency. The new Roberts-Gordon telescoping mixer tube makes it easy to position burner port and flame spreader in proper relation to the combustion air stream. The flame conforms to the shape of the combustion chamber for peak heat transfer, fuel economy and heating efficiency.

- Domestic Burners — Inshot or Upshot Design: 45,000-900,000 BTU/Hr.
- Industrial Burners: Up to 20,000,000 BTU/Hr.
- Famous Roberts-Gordon "Spreader-Flame" insures utmost heating value for each fuel dollar.

Roberts-Gordon manufactures a complete line of gas and oil fired warm air furnaces, hot water and steam boilers, conversion burners, unit heaters — and air conditioners.

ROBERTS-GORDON APPLIANCE CORP.

44 Central Avenue • Dept. AA • Buffalo 6, N. Y.
In Canada — Grimsby, Ontario



Burner shown
with cover
removed

FOR TOPS IN QUALITY, in Profits, in Selection Be Sure to Sell the Famous Roberts-Gordon Line of Top Quality Heating Equipment! SEND COUPON NOW FOR FULL DETAILS!

Yes, I want to cash in on this Hi-Profit Line.
Please send me the latest Roberts-Gordon Catalog.

NAME _____

FIRM _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

appointments

(Continued)

York and Westchester county. Previously he was a sales representative for the Cold Wave Cooling Corp. Excel Refrigeration Supplies, Inc., has been appointed to handle the sale of residential and commercial air conditioners and air conditioning components in the Brooklyn area.

► **GEORGE D. BECKER** as general manager of the heating and air conditioning division, Controls Company of America. Although the division is located in Milwaukee, Mr. Becker will remain at the company's Schiller Park, Ill., headquarters.



George D. Becker



C. W. Gupton

► **C. W. GUPTON** as district manager covering Virginia, North and South Carolina and Georgia for Lima Register Co. Mr. Gupton, who succeeds Jack Thomas, was formerly a sales and service engineer for the Worthington Corp.

► **JOHN R. HORAN** as New York branch sales manager for the residential division of Minneapolis-Honeywell Regulator Co. Mr. Horan, who joined the firm in 1954 as a salesman in the New York office, was a senior sales engineer at the time of his new appointment.

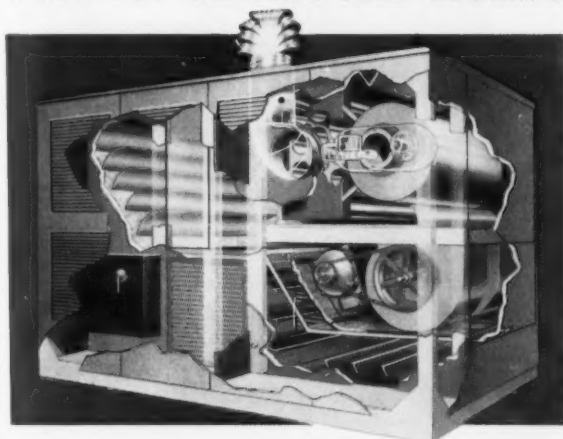
► **WILLIAM P. LOENRER** as district sales manager for the Chicago plant of Joseph T. Ryerson & Son, Inc. Succeeding him as manager of alloy and stainless steel sales at the Chicago plant is G. Phillip Later.

► **JAMES L. BROWN** as a district sales manager for Stewart-Warner Corp.'s heating and air conditioning division. Mr. Brown will be responsible for sales activities in part of Ohio and Michigan.

► **JAMES H. LAVELY** as advertising manager for the Curtis Mfg. Co. Mr. Lavelly was formerly advertising manager and editor of Diesel Publications.

► **E. A. GREENLEE** as division manager of the air distribution, automatic controls and industrial instruments divisions of Barber-Colman Co. Mr. Greenlee was formerly sales manager of the automatic controls division, in which capacity he is being succeeded by Peter Van Dae.

MAMMOTH Compact-Aire ROOF-TOP HEATING AND COOLING



Oil or gas 185,000 to 500,000 B.T.U. output.
Cooling capacity available: 3 to 20 tons.

For Shopping Centers, Supermarkets, Drive-ins, Commercial Buildings, Offices, Schools and Churches

Everything Goes On The Roof! Saves hundreds of square feet of expensive floor space. Roof space costs nothing. Saves by eliminating complex duct work, piping, and wiring. Simplified and lowered constructions and installation costs produce total savings that could pay for entire system.

Year Round Fresh Air Comfort. Fresh air is picked up at roof-top level, filtered, heated or cooled according to season. High efficiency of Compact-Aire assures 12 month comfort air-conditioning.

For Big Buildings and Small. Extreme simplicity of installation, flexibility of units and low cost of operation makes Compact-Aire Roof-Top Heating & Cooling ideal for buildings of all sizes. Write for information.

MAMMOTH FURNACE COMPANY

6425 Cambridge St., Minneapolis, Minnesota

Gentlemen:

Please send information on Compact-Aire
Roof-Top Units, available sizes, costs, etc.

NAME _____

ADDRESS _____

CITY _____ STATE _____

appointments

(Continued)

lee was formerly sales manager of the automatic controls division, in which capacity he is being succeeded by Peter Van Dae.



Edgar Green



Clyde R. Drum

► **EDGAR GREEN** as sales manager for the Pullman Vacuum Cleaner Corp. Mr. Green, executive vice president of the firm, will head the sales force in both the United States and Canada. Clyde R. Drum has been appointed assistant sales manager. Until his recent promotion, Mr. Drum was district manager in Pennsylvania and Delaware.

► **H. J. RUDISAILE**, working out of headquarters in Chicago, as a sales engineer handling electric heating products for Westinghouse Electric Corp's air

conditioning division. Other electric heating products sales engineers and the offices where they will be based are Edward A. Zagula, Pittsburgh; E. W. L. Seager, Staunton, Va.; Arthur F. Holland, St. Louis; and Foster Massey, Atlanta.

► **JAMES E. BRENNAN** as sales representative in Connecticut for Marlo Coil Co. He will handle the sale of air conditioning and heat transfer equipment.

► **WILLIAM P. COKER** as factory representative in North and South Carolina for Thatcher Furnace Co. He will have headquarters in Asheville, N. C.

► **RAY MERONEY CO.**, 357 Foundry St., N.W., Atlanta, Ga., as a factory representative for Elgen Mfg. Corp.

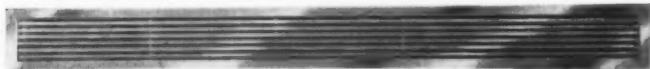
► **DAVID FRIED**, New Orleans, and the L. V. Appleby Co., Albany, N. Y., as sales representatives for Barnebey-Cheney Co.

► **INDUSTRIAL COMBUSTION SALES**, Rochester, N. Y., as manufacturer's representative for Barber Mfg. Co. Industrial Combustion will cover all of New York State except New York City. Edwin P. Cook Co., Denver, will cover Colorado, New Mexico, Arizona, Utah, Nevada and Wyoming. Other new representa-

you can be sure of quality... craftsmanship with **AGITAIR® REGISTERS and GRILLES**

AGITAIR registers and grilles are available in a wide range of sizes and styles to meet every requirement of the architect and designer.

Available in all aluminum, stainless steel, bronze, brass, standard steel and plated finishes. Finish thoroughly baked on hard. Will not chip. When you specify these AGITAIR units, you are specifying quality items.

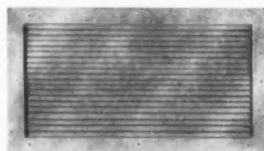


DECORAIRE EXTRUDED ALUMINUM GRILLES
with a selection of modern designed borders

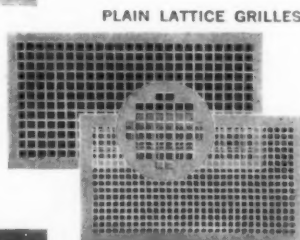
Ask your AGITAIR representative for your copy of catalog or write to Air Devices Inc.

AIR DEVICES INC.
185 MADISON AVE. • NEW YORK 16, N. Y.

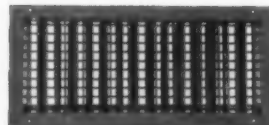
BETTER PRODUCTS FOR
AIR DISTRIBUTION • AIR CLEANING • AIR EXHAUST



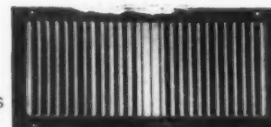
SIGHT TIGHT GRILLES



PLAIN LATTICE GRILLES



REGISTERS



GRILLES



THAT'S THE ONE...
Power Flame
 HAS THE RIGHT BURNER
 FOR MOST APPLICATIONS

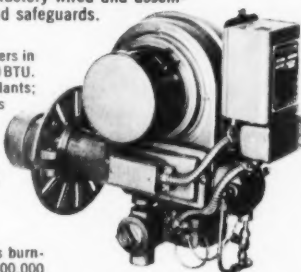
One single source of burners for most every application—that's what Power Flame offers you! In the fact-packed Power Flame Catalogue, you'll discover a complete range of models and sizes in atmospheric burners, power burners and combination burners. All designed for lowest installation and maintenance costs...all "torture tested" for highest efficiency and dependability. Hot idea: Next time, consult Power Flame first!

Power Flame GAS BURNERS

A model to fit every residential, commercial and industrial application. Completely factory wired and assembled, with modern controls and safeguards.

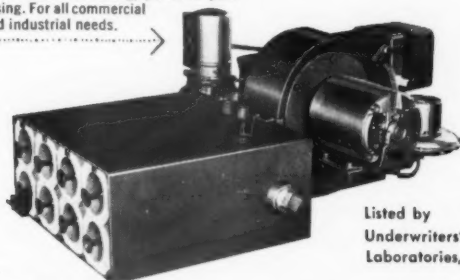
FG Series—Gun type gas burners in series to deliver 85,000 to 4,000,000 BTU. Adaptable to all types of heating plants; ideal for homes, schools, churches and commercial buildings

Flange or pedestal mount optional



A. G. A. Listed

BFG Series—Spread type gas burners; models from 450,000 to 20,000,000 BTU. Ideal for heating, power or processing. For all commercial and industrial needs.



Listed by
 Underwriters'
 Laboratories, Inc.

Write today for complete literature, information, and specifications on POWER-FLAME gas burners. Also get all the facts about THORO-MIX gas burners, and COMBI-MATIC dual fuel burners.

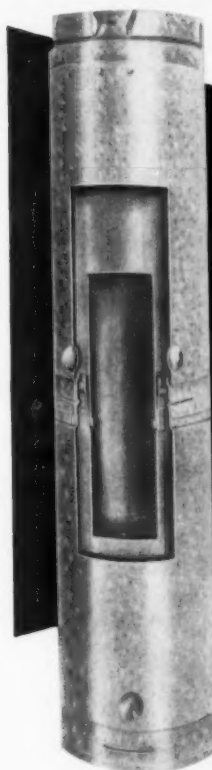
Power Flame
 Division, Inc. / 1203 MAIN ST.
 GRANDVIEW, MO.

DURA-VENT THE SUPERIOR GAS VENT SYSTEM

FOR EVERY VENTING REQUIREMENT

The Most Complete Line

- 3 thru 20 inch pipe and fittings
- All U.L. LISTED



ATTRACTIVE DURA-VENT
 TOPS AID DRAFT ACTION.



DURA-VENT IS STRONG.
 DIE FORMED PIECES FIT
 SNUGLY, SAFELY.

THE ONLY GAS VENT
 PIPE WITH THE PAT-
 ENTED ROTATING LOCK
 SAVING JOB TIME.
 JOINTS CAN BE ROTATED
 AFTER LOCKING—A
 DURA-VENT EXCLUSIVE.

Now Dura-Vent can provide you with Type B vent pipe and fittings for *any* job—3" thru 20". All Dura-Vent pipes and fittings are *UL listed*. You can be *assured* that Dura-Vent—the *superior* system—can meet all building code requirements for Type B vents, any architectural specifications.

WRITE TODAY FOR LITERATURE
 AND NAME OF NEAREST DIS-
 TRIBUTOR. TWO STRATEGICALLY
 LOCATED PLANTS FOR PROMPT
 SERVICE.



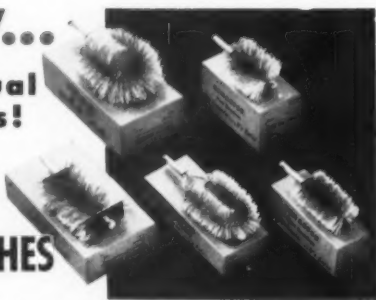
DURA-VENT
 CORPORATION

Affiliate of Peerless Manufacturing Div. of Dover Corporation
 Factory & Western Sales Office, 2525 El Camino Real, Redwood City, Calif.
 Factory & National Sales Office, 1400 W. Ormsby Ave., Louisville 1, Kentucky

NOW...

in individual cartons!

SCHAEFER FLUE BRUSHES



- No more pricked fingers or danger from rusted bristles.
- Easier to display, merchandise and handle.
- Longer-wearing SILVER-BRITE RUSTPROOF WIRE or Black Tempered Wire.
- Every Carton clearly marked as to number, shape, size or specifications.
- Each and every brush in its own carton insures clean stock and eliminates re-wrapping.
- There's a correct Schaefer Brush for every industrial and domestic use.

Schaefer's special alloy "Silver-Brite" rustproof spring steel wire has been developed for longer wear, more effective cleaning. Here's extra value, extra satisfaction in any brush and each is individually packaged for easier handling.

**NO INCREASE
IN PRICE!**

SCHAEFER BRUSH MFG. CO.

117 West Walker St.

Milwaukee 4, Wisconsin

BUY SCHAEFER--IT'S SAFER

Write for SCHAEFER Catalog on flue and furnace brushes, or for information on any special brushes for specific requirements.

BEVERLY POWER

**EFFICIENT
EASY TO USE**

Slitting Shear

Designed to Provide:

- Fast, Clean Accurate Slitting
- Quick, Easy Set-ups to Desired Cutting Widths
- Enclosed Direct-Drive for Safe, Sure Cutting



The extra-rigid, easily adjusted Back Gauge of the Beverly Power Slitter provides a positive stop and a solid base for the sheet as it moves through the machine. The Gauge can be quickly removed to leave the shear's deep throat open for free-hand slitting if desired. Spring-loaded Sheet Retaining Roller and channeled Back Gauge Slide Bar keep sheets in proper alignment for straight, accurate cutting.

Easy-to-read etched scales on either side of machine permit direct reading and quick setting to cutting width. Two reversible, interchangeable chrome cutters are direct-driven through steel shafts to assure safe, positive operation.

See your nearby Beverly Distributor
Write for catalog sheet and complete details

BEVERLY SHEAR MANUFACTURING CO.

3029 W. 111th Street • Chicago 43, Illinois

appointments

(Continued)

tives are Hugh J. McGlinchey Associates, Levittown, Pa., who will cover Maryland, Delaware, Washington, D. C. and parts of Pennsylvania and New Jersey; and The Sales Engineers, Minneapolis, who will serve Minnesota, North and South Dakota, Iowa and Nebraska.

► **F. R. YOUNG Co.** as sales representative for the Modine Mfg. Co. in the Houston, Texas, sales territory. The Young firm is located at 5402 Bell Ave., Houston.

► **ROBERT J. HUMBRECHT** as sales representative for the Original Equipment Sales Div., McQuay-Norris Mfg. Co. He will represent the division in Wisconsin, Minnesota, Iowa and Illinois.

► **IVAN C. SMITH JR.** as sales promotion manager for the Ohio Furnace Co., Inc.



Ivan C. Smith Jr.



Wesley H. Blaylock

► **WESLEY H. BLAYLOCK** as southeastern sales representative for Maxitrol Co.

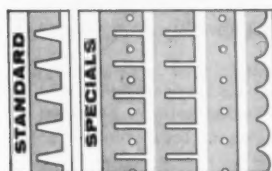
► **FRED HENDERSON Co.**, Berkeley, Calif., as manufacturer's representative for Northwest Foundry & Furnace Co. The Henderson firm will cover parts of California and Nevada. Other new manufacturer's representatives and their territories are A. J. Taylor, Little Rock, Ark., who will serve Mississippi and Tennessee, and Clarke Engineering Sales, Dallas, Tex., who will cover Texas, Oklahoma, Arkansas and Louisiana.

► **R. E. GARDNER Co.**, Nashville, Tenn., as factory representative handling roof ventilators for Western Engineering & Mfg. Co. Other new roof ventilator representatives are Keatts Thermal Equipment Co., Columbus, O.; McGee-Feher Co., Pittsburgh; W. C. Murphy and Associates, New Orleans; and Rodman Engineering Co., Kenmore, N. Y.

► **DON DILLON** as field representative in the mid-western territory for The Brundage Co. Mr. Dillon will work out of the Kalamazoo office. He has been with the company since 1947.

HANDY PIPE
Catalog N°59A
is one of the
HANDIEST
guides to the right
pipe and fittings
ever published.
just write to
F. Meyer & Bro. Co
Peoria, Ill.

MAKE A SLOW JOB FAST AND EASY!



Write to Ruoff & Sons, Inc., Ballmawr 4, N.J., for complete specifications. In Canada: Brown Boggs Foundry and Machine Co., Ltd., Hamilton Ontario.

Distributors: Franchise available in some areas.
WRITE TODAY

With a Ruoff Notcher you can notch flat or curved sheet metal at speeds up to 18 feet per minute. Automatic feed and depth of notch are adjustable.

Ten times as fast as hand cutting! Time for measuring and layout eliminated!

Notches up to 21 gauge sheet with ¼ hp — 110 volt motor, up to 16 gauge with larger motor.

Ruoff Notchers are supplied complete with floor stand. Just plug it in and you are ready to go. Immediate delivery.

RUOFF
NOTCHER
CUTS
PRODUCTION
COSTS

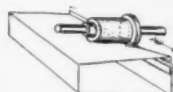
(NA PAT. 2,780,335)

NOISELESS HAMMER

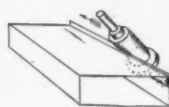
For Closing
Pittsburgh Lock Seams

The Noiseless Hammer is designed to close Pittsburgh Lock Seams of metal ducts faster and easier than any other method. Tool is effective on steel ducts up to and including 26 gauge; works silently and efficiently without power. It is 14½" long and weighs only 4½ lbs. for easy and convenient hand operation.

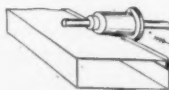
**CLOSES SEAMS IN 1/5 THE TIME
REQUIRED BY USE OF
REGULAR HAMMER**



INSERTING



FOLDING



FLATTENING

Does complete insertion, folding and flattening operation in three

simple rolling operations. First roll inserts tab into lock, second roll bends lock to 45° angle, third roll closes lock flat without bumps — waves — or unevenness. Safe, simple, and easy to use. Increases per man production. Speeds installation, reduces rejects — pays for itself in first 4 hours of use.

**SOLD ONLY BY MAIL. MONEY BACK
GUARANTEE IF NOT SATISFIED.**

\$18.50 Plus COD And Postage

Send check with order, we pay postage
BELL MACHINE SPECIALTIES, INC.
4813 Tremont Ave., Dept. B, Trevose, Penna.



Have you tried the **FLUX**
with the **BULLDOZER** action?

**LA-CO
FLUX**

REGULAR

for all general
purpose
soft soldering



NON-ACID • SELF CLOSING

To Call La-Co Flux "self-cleaning" is almost like calling today's sports car a horseless carriage. La-Co Flux literally bulldozes right thru rust, oil and oxides, leaving the surface whistle-clean. Result: a perfect bond of metal and solder as strong as the tensile strength of the solder itself. It's one flux that works right thru protective coating on today's galvanized sheet. No cleaning, sanding, or scraping needed; all the muscle is built in. There's no safer flux, either—no acid of any kind, no danger of burns or fumes, no staining or pitting of metal. Comes in paste or liquid form, or in handy pencil-like Flux-sticks.

Look for La-Co at your supplier—
or write on letterhead for sample.
Flux Problems? We'll be glad to help; no obligation



LAKE CHEMICAL CO.

3072 W. Carroll Ave., Chicago 12, Ill.



THERE'S AN AIRSERCO PRODUCT EXACTLY RIGHT FOR YOUR APPLICATION!

Airserco builds the most versatile line designed specially for the air-conditioning and refrigeration industry.

See
Your
Wholesaler
Or
Write
Us
For
Complete
Catalog.

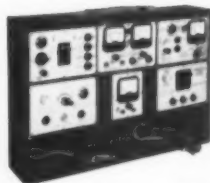
KC-2R
High
Vacuum
Pump



Refrigerant
Measuring Tube



Capacitor
Start
Relay



Hermetic
Compressor
Analyzer

5 Inch
Mercury
Manometer



Portable
Charging
Station

"Creative leadership in air-conditioning and refrigeration."

AIRSERCO MANUFACTURING CO.
435 Melwood Ave. Pittsburgh 13, Pa.

CARTON PACKED



For EASIER HANDLING

All MONCRIEF galvanized Duct, Pipe and Fittings are Carton Packed for greater convenience in handling and shipping. This feature alone saves time and money in that it eliminates the replacement of parts that usually get damaged through handling or while in storage. MONCRIEF Fittings are precision made, at low mass production cost. All uniform in size and quality. All easy to store, Easy to assemble. Order from your wholesaler today.

Write for FREE catalog.



MONCRIEF FURNACE COMPANY

676 Hemphill Ave., N. W., ATLANTA 1, GA.

FLANGES THE DUCT with Amazing Speed!

Less than 5 seconds on short
and lighter pieces . . .
Slightly longer on bulkier pieces

MAKES PERFECT DRIVE-CLEATS TOO!

The ONLY tool that does both.
A complete drive cleating tool . . .
no set-up time . . . no adjustments.
Handy to take out to the job when
not needed in the shop. Turns idle
time into production time. Flanges
any square duct up to 20 gauge.
Quickly pays for itself in time,
material and labor savings.

No. 12 Smith's Cleat Bender
12" Wide —
No. 18 Smith's Cleat Bender
18" Wide —
No. 24 Smith's Cleat Bender
24" Wide —
No. 30 Smith's Cleat Bender
30" Wide —
Also Cleat Bending Brakes

Prices subject to change
without notice



**PERFECT
DRIVE CLEATS**
fit the duct without
the use of a screwdriver.
TREMENDOUS SAVINGS
in erection time and labor.

R. E. SMITH

1124 Elizabeth Avenue • Waukegan, Illinois

E-Z-ONS

Cost Less
Offer MORE!



E-Z-ON "Snap-Tite" Design No. 29



Special tail piece has retractable snap end
and bearing . . . eliminates need to bend damper
or spring duct to insert damper.

You pay less and get more features with speedy
E-Z-ON damper regulators, because they're de-
sign engineered to do a better job . . . quicker.

Here's Proof: • Lower Price . . . Means Lower Cost to You
• Double Prongs Mean Double-Grip . . . No chance of swiveling
• Washer is Permanently Attached . . . No loose washer to drop
or fall in pipe • Modern "Sweep" Wing Nut is Eye-appealing
... Adds new beauty to installations • Balanced Construction . . .
Prevents possible binding of damper in duct.

M. A. GERETT CORP.

724 W. Winnebago St., Milwaukee 5, Wis.

all leading jobbers stock E-Z-ON
Stocked in Canada by THERMIDARE CORP., 722 Cumberland St., Toronto

appointments

(Continued)

► ELLSWORTH PETERS as sales representative in the Minneapolis and St. Paul area for Inland Steel Products Co. He will handle the sale of "Milcor" roof drainage equipment as well as furnace duct and fittings.



Ellsworth Peters



Robert Fowler

► ROBERT FOWLER as district representative in North and South Carolina as well as part of Virginia for Milwaukee Electric Tool Corp.

► E. SMEDLEY WARD JR. as a sales representative covering the New York territory for the Isotron Chemicals Department of Pennsalt Chemicals Corp. He was previously sales representative for the department in Cleveland.

► CHARLES D. DWYER as a district sales representative covering northern Ohio and the eastern half of Michigan for Republic Steel Corp.'s Berger division. He will be located in Canton, O.

► V. N. HARWOOD Co., 250 Delaware Ave., Buffalo, N. Y., as a sales representative for the heating and cooling coil department of Bohn Aluminum & Brass Corp.'s Danville division. The Harwood firm will cover western New York.

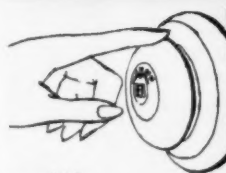
► THOMAS F. CHATWOOD as western sales representative for The C. A. Olsen Mfg. Co. He will cover Iowa, Minnesota, Nebraska, North and South Dakota, Colorado and Utah.

Obituaries

Frank Ederle

FRANK EDERLE, 81, executive secretary of the Grand Rapids Heating Association, died of a heart attack in Grand Rapids on April 8. At one time Mr. Ederle headed the Michigan Heating and Sheet Metal Contractors' Association. He resigned from this position

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obituaries

(Continued)

to handle association business for several construction groups serving the Grand Rapids metropolitan area.

M. C. Beard

M. C. BEARD, former sales manager of Thatcher Furnace Co., died recently at his home in Brooklyn, N. Y. He was 74 years old. Before becoming sales manager of the firm in 1944, Mr. Beard represented Thatcher in Brooklyn and Long Island for many years. He had been associated with the heating and cooling equipment manufacturer for 42 years at his retirement in 1958.

Ralph Penn

RALPH PENN, Penn Controls, Inc., died Monday, April 4, in Los Angeles. Mr. Penn had been associated with the controls company since 1919. For over 40 years he helped in the guidance of the firm, serving for many years as treasurer, and, most recently, as vice chairman of the board of directors.



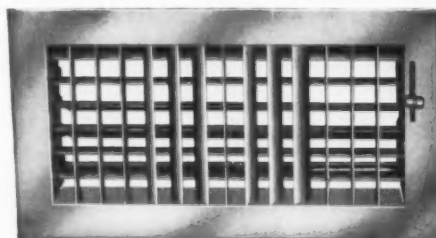
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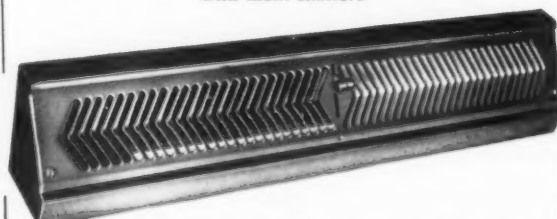
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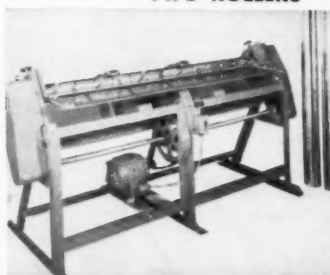
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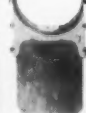
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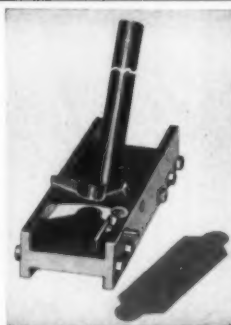
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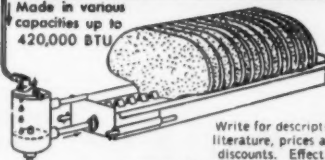
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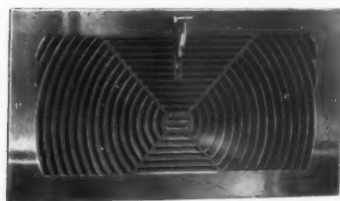
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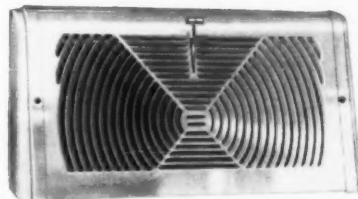
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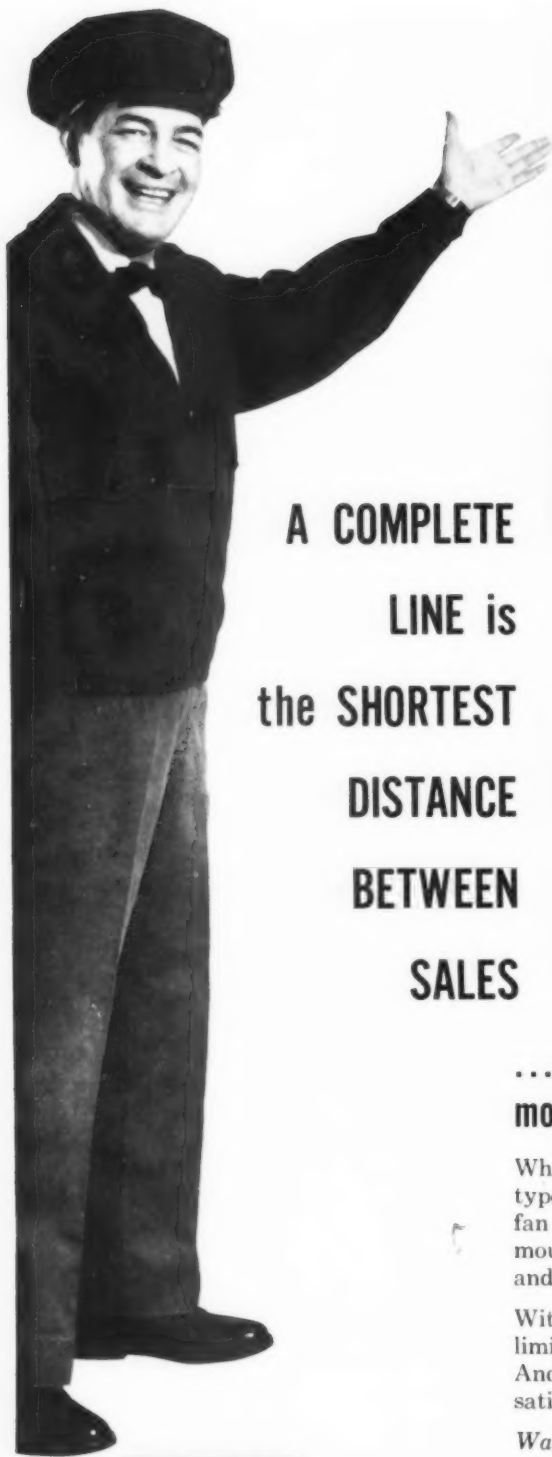


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